

New Test Kits April 2015

The following pages describe the contents of the latest Test Kits in the range:
**Body Biochemical Kit 7, Neurotransmitter Test Kit, Industrial & Environment 4 Test Kit,
Pathology & Histology test Kits: 6B & 6C (More Brain Vials)**

● **Body Biochemicals Kit NUMBER 7 Test Kit**

25 vials, \$109

More Body Biochemicals including some rare, as well as coagulation and lipoproteins.
Plus ATP, Hydrogen Peroxide, Alanine, Proline, Nitric Oxide, Triglycerides and more.

BB 151 Alanine

A non-essential amino acid, high levels linked to high blood pressure. Alterations in the alanine cycle that increase the levels of serum alanine aminotransferase (ALT) is linked to the development of type II diabetes. Good sources in the diet include beans, nuts, seeds, soy, whey, brewer's yeast, brown rice, bran, corn, legumes, whole grains.

BB 152 Amyloid Beta Peptide / Beta Amyloid

The main component of amyloid plaques (extracellular deposits found in the brains of patients with Alzheimer's disease); similar plaques appear in some variants of Lewy body dementia and in inclusion body myositis (a muscle disease); also form the aggregates that coat cerebral blood vessels in cerebral amyloid angiopathy.

BB 153 ATP / Adenosine Triphosphate

Transports chemical energy within cells for metabolism; one of the end products of photophosphorylation, cellular respiration, and fermentation and used by enzymes and structural proteins in many cellular processes, including biosynthetic reactions, motility, and cell division.

BB 154 Catechol-O-Methyl-Transferase/COMT

One of several enzymes that inactivate dopamine, epinephrine, and norepinephrine. Also shortens the biological half-lives of certain neuro-active drugs, like L-DOPA, alpha-methyl DOPA and isoproterenol.

BB 155 Glutathione Reductase

Plays an important role in protecting haemoglobin, red cell enzymes, and biological cell membranes against oxidative damage by increasing the level of reduced glutathione (GSSGR) in the process of aerobic glycolysis; can act as a scavenger for hydroxyl radicals, singlet oxygen, and various electrophiles.

BB 156 Hydrogen Peroxide

Trace quantities released from immune cells (e.g. neutrophils and monocytes) as they come into contact with different bacteria or fungi.

BB 157 Intrinsic Factor Gastric Intrinsic Factor / GIF

Produced by the parietal cells of the stomach; necessary for the absorption of vitamin B12 (cobalamin) later on in the small intestine.

BB 158 L-Dopa

Made and used as part of the normal biology; the precursor to the neurotransmitters dopamine, norepinephrine and epinephrine. As a drug it is used in the clinical treatment of Parkinson's disease and dopamine-responsive dystonia.

BB 159 Lipoprotein High-Density / HDL

Enable the transportation of lipids, such as cholesterol and triglycerides, within the water around cells, including the bloodstream. Remove fats, including cholesterol, from cells, including within artery wall atheroma and transport it back to the liver for excretion or re-utilization. Often informally called good cholesterol.

BB 160 Lipoprotein Lipase

Enzyme produced by many tissues, including adipose tissue, cardiac and skeletal muscle, islets, and macrophages; hydrolyses triglycerides in lipoproteins, such as those found in chylomicrons and very low-density lipoproteins (VLDL), into two free fatty acids and one monoacylglycerol molecule; also involved in promoting the cellular uptake of chylomicron remnants, cholesterol-rich lipoproteins, and free fatty acids; contributes in a pronounced way to normal lipoprotein metabolism and many aspects of metabolism, including energy balance, insulin action, body weight regulation, and atherosclerosis.

BB 161 Lipoprotein Low-Density / LDL

Enable transport of multiple different fat molecules, as well as cholesterol, within the water around cells and within the water-based bloodstream. Transport cholesterol into the artery wall, retained there by arterial proteoglycans and attract macrophages that engulf the LDL particles and start the formation of plaques; increased levels are associated with atherosclerosis. Often informally called bad cholesterol.

BB 162 Lipoprotein Very Low-Density / VLDL

Made by the liver; enable fats and cholesterol to move within the water-based solution of the bloodstream. VLDL is assembled in the liver from triglycerides, cholesterol, and apolipoproteins. VLDL is converted in the bloodstream to low-density lipoprotein.

BB 163 Motilin

Hormone produced from endocrine cells of the duodenal mucosa to help regulate motility of the digestive tract. Called "housekeeper of the gut" because it improves peristalsis in the small intestine and clears out the gut to prepare for the next meal.

BB 164 Nicotinamide Adenine Dinucleotide / NAD

The coenzyme form of the vitamin niacin; found in all living cells; has a crucial roles in many cellular processes, both as a coenzyme for redox reactions and as a substrate to donate ADP-ribose units; involved in age-associated diseases, including diabetes, cancer and neurodegenerative diseases.

BB 165 Nitric Oxide

Serves as a neurotransmitter between nerve cells, part of its general role in redox signalling (helping cells protect themselves, detect damage and then either repair or replace damaged cells). Also of critical importance as a mediator of vasodilation in blood vessels, so playing a key role in renal control of extracellular fluid homeostasis, the regulation of blood flow and blood pressure, and in erection of the penis.

BB 166 Pancreatic Polypeptide

Secreted by the pancreas to regulate pancreatic secretion activities (endocrine and exocrine); also has effects on hepatic glycogen levels and gastrointestinal secretions; secretion is stimulated by eating, exercising, and fasting; can inhibit gallbladder contraction; elevated in anorexia nervosa and reduced in conditions associated with increased food intake.

BB 167 Peroxynitrite / Peroxonitrite

Produced in the body in inflammation, cardiovascular disease, neurodegeneration, diabetes, and other pathologies.

BB 168 Plasmin

Enzyme present in blood that degrades many blood plasma proteins, most notably, fibrin clots; activates collagenases, some mediators of the complement system and weakens the wall of the Graafian follicle (leading to ovulation).

BB 169 Plasminogen

The inactive enzyme precursor of plasmin.

BB 170 Proline

A non-essential amino acid; involved in tissue repair, collagen formation, arteriosclerosis prevention and blood pressure maintenance.

BB 171 Quinolinic Acid /2,3-Pyridinedicarboxylic Acid

A downstream product of the kynurenine pathway which metabolizes the amino acid tryptophan; implicated in mood disorders, schizophrenia, conditions related to neuronal death, amyotrophic lateral sclerosis, Alzheimer's disease, brain ischemia, HIV associated neurocognitive disorder, Huntington's disease, Parkinson's disease and Lyme disease with CNS involvement.

BB 172 Thrombopoietin / Megakaryocyte Growth And Development Factor

A glycoprotein hormone produced by the liver and kidney which regulates the production of platelets; stimulates the production and differentiation of megakaryocytes, the bone marrow cells that bud off large numbers of platelets.

BB 173 Tissue Plasminogen Activator

A protein involved in the breakdown of blood clots; as an enzyme, it catalyzes the conversion of plasminogen to plasmin. Used in clinical medicine to treat only embolic or thrombotic stroke. Use is contra-indicated in hemorrhagic stroke and head trauma.

BB 174 Triglycerides

A blood lipid that help enable the bidirectional transference of adipose fat and blood glucose from the liver. High levels of triglycerides in the bloodstream have been linked to atherosclerosis and, by extension, the risk of heart disease and stroke.

BB 175 Vasoactive Intestinal Peptide

Produced in many tissues including the gut, pancreas, and suprachiasmatic nuclei of the hypothalamus in the brain; stimulates contractility in the heart, causes vasodilation, increases breakdown of glucose, lowers arterial blood pressure and relaxes the smooth muscle of trachea, stomach and gall bladder. as a white blood cell growth factor. Stimulates stem cells to produce granulocytes (neutrophils, eosinophils, and basophils) and monocytes.

● Neurotransmitter Test Kit

13 vials, \$47

Scientists have now identified some 60 different molecules that meet the criteria for being regarded as neurotransmitters, so this is inevitably a partial list, but covers the most useful or important ones; that affect breathing, digestion, mood and much else.

All these vials are available in other kits (Body Biochemicals and Hormone and Amino Acids Test Kits). This kit simply brings the most important neurotransmitters together in one place.

N1 01 Acetylcholine / ACh

Acts on both the peripheral nervous system and central nervous system and is the only neurotransmitter used in the motor division of the somatic nervous system. Also the principal neurotransmitter in all autonomic ganglia. In cortex increases responsiveness to sensory stimuli; decreases heart rate and contraction strength, dilates blood vessels, increases peristalsis in the stomach and digestive contractions, decreases bladder capacity, increases voluntary voiding pressure; also affects the respiratory system and stimulates secretion by all glands that receive parasympathetic nerve impulses. Important in memory and learning and is deficient in the brains of those with late-stage Alzheimer disease. May be involved in myasthenia gravis; nicotine binds to same receptors.

N1 02 Adenosine

In general has an inhibitory effect in the central nervous system. Involved in regulating blood flow to various organs through vasodilation; believed to play a role in promoting sleep and suppressing arousal. Affects central nervous system and peripheral nervous system; constituent of ATP and ADP. May be involved with asthma; stimulatory effect of tea and coffee because inhibits adenosine.

N1 03 Anandamide

Pain control; may be used by the brain as a central fine-tuner of electrical activity; inhibits movement; involved with mood; short-term memory; male fertility (high levels slow speed of sperm); acts as a chemical messenger between the embryo and uterus during implantation of the embryo in the uterine wall; may control coughing and various respiratory functions; may increase appetite. Also known as the bliss molecule ('ananda' is Sanskrit for bliss); also called the body's own cannabis (cannabis binds to the same receptors as anandamide); chocolate contains anandamide; may be involved in Crohn's disease, Parkinson's disease, drug addiction, schizophrenia, autism and Gilles de la Tourette's syndrome.

N1 04 L-Aspartate

Also an amino acid. Stimulates NMDA receptors, the predominant molecular device for controlling synaptic plasticity and memory function; involved in conveying pain messages.

N1 05 Dopamine

In parts of the brain that control subconscious movement of skeletal muscles; regulating muscle tone; increases the efficiency of the heartbeat and helps return the blood pressure to normal; involved in emotional responses, such as reward-seeking behaviour; most responsible for cognitive alertness. Decreased levels associated with Parkinson's disease; increased levels with schizophrenia; may be involved with ADD, autism, La Tourette's syndrome and depression. All drugs that create a dependency artificially increase the amount of dopamine in the reward circuits.

N1 06 Epinephrine / Adrenalin

Helps body resist stress by increasing heart rate, constricting blood vessels, accelerating respiration, decreasing digestion, increasing efficiency of muscular contractions, increasing blood sugar, stimulating cellular metabolism.

N1 07 GABA / Gamma-Aminobutyrate Acid

An amino acid. The chief inhibitory neurotransmitter in the central nervous system; plays the principal role in reducing neuronal excitability throughout the nervous system; blocks noradrenaline and dopamine. Deficiencies found in hypertension and seizures; a target for anti-anxiety drugs.

N1 08 Glutamic Acid/ Glutamate

Also an amino acid. Can be manufactured by the body; precursor of proline, ornithine, arginine and polyamines; a stimulatory neurotransmitter; can be converted by the body into GABA; the most common neurotransmitter in the brain; always excitatory; nearly all excitatory neurons in the CNS and possibly half of the synapses in the brain communicate via glutamate; involved in visual adaptation to light and dark; involved in conveying pain messages. Associated with learning and memory. May be involved in Alzheimer's disease. Many epileptics have increased levels of glutamic acid; part of the acute reaction to withdrawal from drug addiction includes increased production of glutamate.

N1 09 Glycine

Also an amino acid. Can be synthesized from other amino acids (serine and threonine); acts as an inhibitory neurotransmitter in the central nervous system, especially in the spinal cord, brainstem, and retina; assists in manufacture of DNA, glycerol, phospholipids, collagen, glutathione and cholesterol conjugates; essential for one of key liver detoxification pathways; stimulates secretion of glucagons. Implicated in Parkinson's disease; low levels often found in manic-depressives and epileptics; people with motor neurone disease may have impaired glycine metabolism.

N1 10 Histamine

Involved in sleep-wake regulation, by increasing wakefulness and prevent sleep; also protects against the susceptibility to convulsion, drug sensitization, denervation super-sensitivity, ischemic lesions and stress; may controls the mechanisms by which memories and learning are forgotten; may be involved in some forms of alcoholism. Released during an allergic reaction and inflammation; narrows bronchi in lungs, increases permeability of blood vessels, lowers blood pressure, causes itching and stimulates production of acid in the stomach; secretion of digestive juices. May be implicated in some types of schizophrenia and multiple sclerosis.

N1 11 Nitric Oxide

Serves as a neurotransmitter between nerve cells, part of its general role in redox signalling (helping cells protect themselves, detect damage and then either repair or replace damaged cells). Also of critical importance as a mediator of vasodilation in blood vessels, so playing a key role in renal control of extracellular fluid homeostasis, the regulation of blood flow and blood pressure, and in erection of the penis.

N1 12 Norepinephrine/ Noradrenaline

Most responsible for vigilant concentration and underlies flight-fight response; helps body resist stress by increasing heart rate, constricting blood vessels, accelerating respiration, decreasing digestion, increasing efficiency of muscular contractions, increasing blood sugar, stimulating cellular metabolism.

N1 13 Serotonin / 5-Hydroxytryptamine /5-HT

Primarily found in the gastrointestinal tract, platelets, and the central nervous system; concerned with conscious processes, involved in controlling states of consciousness and mood; sensory perception; induces sleep; temperature regulation; released at site of bleeding to constrict small blood vessels and control blood loss; involved in conveying pain messages; inhibits gastric secretion and stimulates smooth muscles in the intestinal wall; decreases carbohydrate cravings; provides a feeling of fullness; inhibits release of prolactin. Action in brain disrupted by some hallucinogenic drugs, particularly LSD; excess serotonin implicated in Raynaud's disease. Also found in insect venoms, plant spines and in many seeds and fruits.

New Single Vials

Barmah Forest Virus vial: \$11

Herpes Virus 7 vial: \$11

Note these vials may appear in future new Virus Test Kits

Latest Update Vials

Vaccination 2014/2015 annual update vial: \$9

If you have not updated this vial for awhile you can get the

Vaccination 1992 to 2014/2015 update vial: \$9

Ebola Virus Update Vial: \$9

(updates the previous Ebola vial in Virus Kit #2)

New vial has 2 more strains including Sierra leone strain. Total strains now equals four.

● Industrial & Environment NUMBER 4 Test Kit

25 vials, \$85

More environmental chemicals including flame retardants, water fluoridation chemicals, some of the toxic substances found in cigarette smoke, Chloroform, Sulphur Dioxide, Vinyl Chloride and Disperse Blue a dark clothing dye known to be highly allergenic. Plus a Hydrocarbon Mix vial and an Indoor Air Pollution Mix vial.

IE 4 76 **Acrolein**

Primarily used as an intermediate in the synthesis of acrylic acid and as a biocide; may be formed in cigarette smoke, from burning oil (including cooking oil), from the breakdown of certain pollutants in outdoor air, vehicle exhaust fumes, and forest and wild fires. Toxic and is a strong irritant for the skin, eyes, and nasal passages.

IE 4 77 **Acrylonitrile**

In cigarette smoke; used in the manufacture of acrylic and modacrylic fibres; also used as a raw material in the manufacture of plastics; may be released to the air during its manufacture and use; also from landfills, and through incineration of sewage sludge.

IE 4 78 **Carbon Monoxide / CO**

Produced from the partial oxidation of carbon-containing compounds, forming when there is not enough oxygen to produce carbon dioxide, such as when operating a stove or an internal combustion engine in an enclosed space. Natural sources of CO include volcanoes, forest fires, and other forms of combustion. Produced in normal metabolism in low quantities, and is thought to have some normal biological functions.

IE 4 79 **Chloroform**

May be released into the air from a large number of sources related to its manufacture and use, including pulp and paper mills, hazardous waste sites, and sanitary landfills; also formed in the chlorination of water (drinking, waste and swimming pools); chlorinated drinking water releases chloroform when hot water is used in the home.

IE 4 80 **Decabromodiphenyl Ether / Pentabromophenyl Ether**

Flame retardant; used in soft furnishings, some synthetic curtains and the backs of televisions.

IE 4 81 **Disperse Blue 106 and 124**

Two dark blue textile dyes found in fabrics coloured dark blue, brown, black, purple, and some greens; frequently found in acetate and polyester liners of clothing, and in lycra exercise clothing in these colours; also in dark nylon stockings / panty hose. Known to cause dermatitis.

IE 4 82 **Fluorosilicic Acid / Hexafluorosilicic Acid / Silicofluoric acid**

The most commonly used chemical for water fluoridation.

IE 4 83 **1,2,5,6,9,10-Hexabromocyclododecane / HBCD / HBCDD**

A flame retardant; primary application is in extruded and expanded polystyrene foam that is used as thermal insulation in the building industry; also used in upholstered furniture, automobile interior textiles, car cushions and insulation blocks in trucks, packaging material, video cassette recorder housing and electric and electronic equipment.

IE 4 84 **Hexachlorobutadiene / Hexachloro-1,3-Butadiene / HCB**

Used mainly as an intermediate in the manufacture of rubber compounds; also used in the production of lubricants, as a fluid for gyroscopes, as a heat transfer liquid, and in hydraulic fluids. Small amounts found in the air and in drinking water.

IE 4 85 **Hydrocarbon Mix**

Contains decane, hexadecane, tetratriacontane and pentacontane; the major part of diesel and aviation fuel, part of lubricating oils and anti-corrosive agents.

IE 4 86 **Indoor Air Pollution Mix**

50 chemicals commonly found (and of concern) in indoor air pollution including 2-propanol, n-undecane, styrene, acetone, m-xylene, etc.

IE 4 87 **Isoprene / 2-methyl-1,3-Butadiene**

Produced and emitted by many species of trees into the atmosphere (major producers are oaks, poplars, eucalyptus, and some legumes). Cigarette smoke.

IE 4 88 Isopropanol / Isopropyl Alcohol

One of the most widely used solvents in the world; also used as a chemical intermediate.

IE 4 89 n-Butanol / 1-Butanol / Butyl Alcohol

Present in many foods and beverages; a permitted artificial flavourant in the United States; an ingredient in perfumes and used as a solvent for the extraction of essential oils; used in the manufacture of antibiotics, hormones, and vitamins; as a solvent for paints, coatings, natural resins, gums, synthetic resins, dyes, alkaloids, and camphor; acts as a swelling agent in textiles, as a component of hydraulic brake fluids, cleaning formulations, degreasers, and repellents, and as a component of ore flotation agents, and of wood-treating systems.

IE 4 90 Polycyclic Aromatic Hydrocarbons / PAH Mix

Produced when coal, oil, gas, petrol, wood, garbage, forming small particles in the air. High temperature cooking will form PAHs in meat and in other foods. Cigarette smoke contains PAHs. The United States Environmental Protection Agency has designated 32 PAH compounds as priority pollutant. Exposure linked to decreased lung function, neurological disorders, cancer, heart attacks, low birth weight, premature births and childhood developmental delay.

IE 4 91 Potassium Dichromate

Most commonly found in cement and leather; also found in chemicals used to etch/clean glass, photography and photographic screen printing. Common allergen.

IE 4 92 Propylene Dichloride / 1,2-Dichloropropane

Used as a chemical intermediate in the production of chlorinated organic chemicals, as an industrial solvent, in ion exchange manufacture, in toluene diisocyanate production, in photographic film manufacture, for paper coating, and for petroleum catalyst regeneration. Propylene dichloride is also emitted from landfills.

IE 4 93 Quinoline

Used mainly as an intermediate in the manufacture of other products; also used as a catalyst, a corrosion inhibitor, in metallurgical processes, in the manufacture of dyes, as a preservative for anatomical specimens, in polymers and agricultural chemicals, and as a solvent for resins and terpenes. It is also used as an antimalarial medicine. A potential source of very low exposure to quinoline includes the inhalation of ambient air contaminated by emissions from petroleum refining, quenching and coking, and wastewater processing.

IE 4 94 Sodium Fluoride Used in water fluoridation.

IE 4 95 Sodium Fluorosilicate Used in water fluoridation.

IE 4 96 Sodium Sulphite

Used in water treatment and to reduce chlorine levels in pools, and in the pulp and paper industry; used in photographic developing and in the textile industry and the leather trade. Used as a preservative to prevent dried fruit from discolouring and for preserving meats.

IE 4 97 Sulphur Dioxide

Major air pollutant, particularly after a volcanic eruption. Can cause breathing difficulty for people with asthma; long-term exposure causes respiratory illness and aggravates cardiovascular diseases; linked to infant death, ischemic stroke, respiratory disease, and premature death. Used as a preservative for dried fruit; used in wine making.

IE 4 98 3,3',5,5'-Tetrabromobisphenol A / TBBPA / 4,4'-Isopropylidenebis(2,6-dibromophenol)

A flame retardant used in televisions and printed circuit boards; an endocrine disruptor and immunotoxicant; structurally mimics the thyroid hormone thyroxin (T4) and can bind more strongly to the transport protein transthyretin than T4 does, likely interfering with normal T4 activity.

IE 4 99 Trihalomethanes Mix

Many trihalomethanes find uses in industry as solvents or refrigerants. THMs are also environmental pollutants, and many are considered carcinogenic. Formed as a by-product predominantly when chlorine is used to disinfect water for drinking.

IE 4 100 Vinyl Chloride

Found in cigarette smoke, used to make PVC plastic and vinyl products. Sources of emissions include the discharge of exhaust gases from factories that manufacture or process vinyl chloride, landfills, or evaporation from areas where chemical wastes are stored.

There are now 3 Brain & Nervous System Test kits: Pathology/Histology Kits 6A, 6B and 6C. The new ones, 6B & 6C are itemised below. Please contact us for a list of the kit 6A contents or go to the website: www.kinesiologyshop.com (click 'Other Products' button & arrow through to the 3rd page)

● PH6B: more brain & Nervous System Test Kit Test Kit

50 vials, \$211

More healthy brain parts including amygdala, hypothalamus, prefrontal cortex, primary motor cortex, basal ganglia, brain stem, cerebrospinal fluid, left 7 right hemispheres, corpus collusum, dura mater, pons, parietal lobes, occipital lobes, visual cortex and many more.

PH 6B 26 **Amygdala**

Groups of nuclei located deep and medially within the temporal lobes of the brain; considered part of the limbic system; performs a primary role in the processing of memory, decision-making and emotional reactions; controls the way we react to certain stimuli, or an event that causes an emotion, that we see as potentially threatening or dangerous.

PH 6B 27 **Auditory Association Area**

An area in the temporal lobe of the brain within Wernicke's area near the lateral cerebral sulcus, which is critical for processing acoustic signals so they can be interpreted as speech, music or other sounds.

PH 6B 28 **Auditory Cortex**

Located bilaterally, roughly at the upper sides of the temporal lobes. The part of the cerebral cortex that processes auditory information, performing basic and higher functions in hearing.

PH 6B 29 **Basal Ganglia / Basal Nuclei**

Comprise multiple subcortical nuclei at the base of the forebrain. Strongly interconnected with the cerebral cortex, thalamus, and brainstem, as well as several other brain areas. Associated with a variety of functions including: control of voluntary motor movements, procedural learning, routine behaviours or habits such as bruxism (teeth grinding), eye movements, cognition and emotion.

PH 6B 30 **Brain Stem**

The posterior part of the brain, adjoining and structurally continuous with the spinal cord; provides the main motor and sensory innervation to the face and neck via the cranial nerves; the nerve connections of the motor and sensory systems from the main part of the brain to the rest of the body pass through the brainstem. Also plays an important role in the regulation of cardiac and respiratory function, and also regulates the central nervous system, and is pivotal in maintaining consciousness and regulating the sleep cycle.

PH 6B 31 **Brain Stem Reticular Formation**

Essential for governing some of the basic functions; involved in multiple tasks such as regulating the sleep-wake cycle and filtering incoming stimuli to discriminate irrelevant background stimuli.

PH 6B 32 **Caudate Nucleus**

One of three basic structures that make up the basal ganglia; responsible largely for voluntary movement.

PH 6B 33 **Cerebellar Nuclei**

Clusters of grey matter lying within the white matter at the core of the cerebellum. Give rise to nerve fibres that carry impulses from cerebellum to other parts of brain and to the spinal column.

PH 6B 34 **Cerebral Cortex**

Grey matter that is outermost to the cerebrum; plays a key role in memory, attention, perceptual awareness, thought, language, and consciousness.

PH 6B 35 **Cerebral Hemisphere, Left**

Concerned with spoken and written language, numerical and scientific skills, ability to use and understand language, reasoning.

PH 6B 36 **Cerebral Hemisphere, Right**

Concerned with musical and artistic awareness, space and pattern perception, recognition of faces and

emotional content of facial expressions, generating emotional content of language, generating mental images to compare spatial relationships.

PH 6B 37 **Cerebrospinal Fluid**

A clear colourless bodily fluid found in the brain and spine; produced in the choroid plexus of the brain; acts as a cushion for the brain's cortex, providing basic mechanical and immunological protection to the brain inside the skull, and it serves a vital function in cerebral auto-regulation of cerebral blood flow.

PH 6B 38 **Cingulate Gyrus**

Receives inputs from the thalamus and the neocortex, and projects to the entorhinal cortex via the cingulum; forms part of the limbic system, which is associated with mood and emotions; helps people to be flexible in learning and processing new situations; highly important in disorders such as depression and schizophrenia.

PH 6B 39 **Clastrum**

A thin, irregular, sheet of neurons which is attached to the underside of the neocortex in the centre of the brain; full range of functions unclear but plays a strong role in communication between the two hemispheres of the brain, specifically between cortical regions controlling attention.

PH 6B 40 **Cochlear Nuclei**

Collections of neurons in the brainstem that receive input from the cochlear nerve, that carries sound information from the cochleae. The outputs from the cochlear nuclei are received in higher regions of the auditory brainstem.

PH 6B 41 **Corpus Callosum**

A wide, flat bundle of neural fibres that connects the left and right cerebral hemispheres and facilitates inter-hemispheric communication.

PH 6B 42 **Dura Mater**

A thick membrane that is the outermost of the three layers of the meninges that surround the brain and spinal cord; it is responsible for keeping in the cerebrospinal fluid.

PH 6B 43 **Epithalamus**

A segment of the diencephalon; includes the habenula, the habenular commissure, the stria medullaris and the pineal body. Its function is the connection between the limbic system to other parts of the brain.

PH 6B 44 **Forebrain / Prosencephalon**

Contains the thalamus, hypothalamus and the cerebrum; functions including receiving and processing sensory information, thinking, perceiving, producing and understanding language, and controlling motor functions.

PH 6B 45 **Frontal Lobe, Left**

Considered our emotional control centre and home to our personality; involved in motor function, problem solving, spontaneity, memory, language, initiation, judgement, impulse control, and social and sexual behaviour; involved in controlling language related movement.

PH 6B 46 **Frontal Lobe, Right**

Considered our emotional control centre and home to our personality; involved in motor function, problem solving, spontaneity, memory, language, initiation, judgement, impulse control, and social and sexual behaviour; plays a role in non-verbal abilities.

PH 6B 47 **Globus Pallidus / Paleostriatum**

Part of the basal ganglia; involved in the regulation of voluntary movement; if the globus pallidus is damaged, it can cause movement disorders.

PH 6B 48 **Hindbrain / Rhombencephalon**

Includes the cerebellum, the pons and the medulla oblongata, which function collectively to support vital bodily processes.

PH 6B 49 **Hypothalamus**

Located below the thalamus, just above the brainstem; responsible for certain metabolic processes and other activities of the autonomic nervous system; synthesises and secretes certain neurohormones, and these in turn stimulate or inhibit the secretion of pituitary hormones; controls body temperature, hunger, important aspects of parenting and attachment behaviours, thirst, fatigue, sleep, and circadian rhythms.

PH 6B 50 Inferior Colliculus

The principal midbrain nucleus of the auditory pathway; receives input from several peripheral brainstem nuclei in the auditory pathway, as well as inputs from the auditory cortex.

PH 6B 51 Inferior Olivary Nucleus

The largest nucleus in the olivary body, part of the medulla oblongata; closely associated with the cerebellum, so is involved in control and coordination of movements, sensory processing and cognitive tasks.

PH 6B 52 Insula / Insular Cortex / Insular Cortex / Insular Lobe

A portion of the cerebral cortex folded deep within the lateral sulcus, the fissure separating the temporal and the frontal lobes; believed to be involved in consciousness and play a role in diverse functions usually linked to emotion or the regulation of the body's homeostasis.

PH 6B 53 Internal Capsule

Contains all of the pathways that allow information to be transferred between the cerebral cortex and the spinal cord, brainstem, and subcortical structures (ie: thalamus, basal ganglia).

PH 6B 54 Midbrain / Mesencephalon

A portion of the central nervous system associated with vision, hearing, motor control, sleep/wake, arousal (alertness), and temperature regulation.

PH 6B 55 Motor Cortex

Comprises the primary motor cortex, premotor cortex, and supplementary motor area. the region of the cerebral cortex involved in the planning, control, and execution of voluntary movements.

PH 6B 56 Occipital Lobe, Left

Is the visual processing centre of the brain containing most of the anatomical region of the visual cortex; receives visual input from the retina.

PH 6B 57 Occipital Lobe, Right

Is the visual processing centre of the brain containing most of the anatomical region of the visual cortex; receives visual input from the retina.

PH 6B 58 Parietal Lobe, Left

Part of the cerebral cortex; has to be able to process sensory information within seconds. The parietal lobe is where information such as taste, temperature, pain and touch are integrated, or processed. Several portions of the parietal lobe are important in language processing.

PH 6B 59 Parietal Lobe, Right

Part of the cerebral cortex; has to be able to process sensory information within seconds. The parietal lobe is where information such as taste, temperature, pain and touch are integrated, or processed. Several portions of the parietal lobe are important in language processing.

PH 6B 60 Pons

Area of the hindbrain that sits directly above the medulla; serves as a message station between several areas of the brain; helps relay messages from the cortex and the cerebellum. Without the pons, the brain would not be able to function because messages would not be able to be transmitted, or passed along; also plays a key role in sleep and dreaming.

PH 6B 61 Precentral Gyrus

Part of the primary motor cortex; the location of the primary somatosensory cortex, the main sensory receptive area for the sense of touch.

PH 6B 62 Prefrontal Cortex / PFC

The anterior part of the frontal lobes of the brain; has been implicated in planning complex cognitive behaviour, personality expression, decision making and moderating social behaviour; the basic activity of this brain region is considered to be orchestration of thoughts and actions in accordance with internal goals.

PH 6B 63 Premotor Cortex

Functions of the premotor cortex are diverse and not fully understood; projects directly to the spinal cord and therefore may play a role in the direct control of behavior, with a relative emphasis on the trunk muscles of the body. May also play a role in planning movement, in the spatial guidance of movement, in

the sensory guidance of movement, in understanding the actions of others, and in using abstract rules to perform specific tasks.

PH 6B 64 Primary Motor Cortex / Brodmann'S Area 4

Located in the posterior portion of the frontal lobe; works in association with other motor areas to plan and execute movements.

PH 6B 65 Purkinje Neurons In Cerebellum

Some of the largest neurons in the human brain; send inhibitory projections to the deep cerebellar nuclei, and constitute the sole output of all motor coordination in the cerebellar cortex.

PH 6B 66 Putamen

Located at the base of the forebrain; main function is to regulate movements and influence various types of learning. Employs GABA, acetylcholine, and enkephalin to perform its functions. Involved in degenerative neurological disorders, such as Parkinson's disease.

PH 6B 67 Red Nucleus / Nucleus Ruber

Located in the midbrain and involved in motor coordination; controls crawling of babies, arm swinging in normal walking; may play an additional role in controlling muscles of the shoulder and upper arm; also has limited control over hands.

PH 6B 68 Somatosensory Cortex

The main sensory receptive area for the sense of touch, including specific sensitivity to pain and temperature, and the proprioception system, which monitors the body's place in space.

PH 6B 69 Stellate Cells/ Stellate Neurons from the V1 Region In The Visual Cortex

Receive excitatory synaptic fibres from the thalamus and process feed forward excitation to the visual cortex pyramidal cells.

PH 6B 70 Substantia Nigra

Located in the mesencephalon/midbrain that plays an important role in reward, addiction, and movement. Parkinson's disease is characterized by the death of dopaminergic neurons in the substantia nigra pars compacta.

PH 6B 71 Subthalamic Nucleus / STN

Part of the basal ganglia system; exact function unknown, but considered to be one of the main regulators of motor function related to the basal ganglia. STN dysfunction has been shown to increase impulsivity in individuals presented with two equally rewarding stimuli.

PH 6B 72 Superior Colliculus

On the dorsal aspect of the midbrain; plays a role in helping orient the head and eyes to all types of sensory stimuli.

PH 6B 73 Temporal Lobe, Left

The temporal lobes are involved in the retention of visual memories, processing sensory input, comprehending language, storing new memories, emotion, and deriving meaning.

PH 6B 74 Temporal Lobe, Right

The temporal lobes are involved in the retention of visual memories, processing sensory input, comprehending language, storing new memories, emotion, and deriving meaning.

PH 6B 75 Visual Cortex

Located in the occipital lobe; part of the cerebral cortex responsible for processing visual information.

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PH 6C 76 Abducens Nucleus

Nuclei in pons providing motor impulses that control eyeball movement via the abducens (VI cranial) nerves.

PH 6C 77 Arachnoid Villi / Granulations

Small protrusions of the arachnoid (the thin second layer covering the brain) through the dura mater (the thick outer layer); allow cerebrospinal fluid to exit the sub-arachnoid space and enter the blood stream; act as one-way valves.

PH 6C 78 Calcarine Fissure / Calcarine Sulcus

Located on the medial surface of the occipital lobe and divides the visual cortex into two.

PH 6C 79 Central Sulcus

A prominent landmark of the brain, separating the parietal lobe from the frontal lobe and the primary motor cortex from the primary somatosensory cortex.

PH 6C 80 Cerebral Aqueduct

Contains cerebrospinal fluid, and connects the third ventricle in the diencephalon to the fourth ventricle within the region of the mesencephalon and metencephalon.

PH 6C 81 Choroid Plexus

A structure in the ventricles of the brain where cerebrospinal fluid is produced.

PH 6C 82 Diencephalon

Located on top of the brain stem; consists of the thalamus, the subthalamus, the hypothalamus, and the epithalamus.

PH 6C 83 Facial Motor Nucleus / Facial Nucleus

A collection of neurons in the brainstem that belong to the facial nerve (cranial nerve VII); they innervate the muscles of facial expression and the stapedius.

PH 6C 84 Fourth Ventricle

Extends from the cerebral aqueduct to the obex, and is filled with cerebrospinal fluid.

PH 6C 85 Grey Matter / Gray Matter

A major component of the central nervous system, consisting of neuronal cell bodies, neuropil (dendrite, myelinated and unmyelinated axons), glial cells (astroglia and oligodendrocytes) and capillaries; includes regions of the brain involved in muscle control, and sensory perception such as seeing and hearing, memory, emotions, speech, decision making, and self-control.

PH 6C 86 Hypoglossal Nucleus

In the medulla oblongata; the nucleus of origin of the hypoglossal nerve (the twelfth cranial nerve that innervates muscles of the tongue).

PH 6C 87 Lateral Sulcus / Sylvian Fissure / Lateral Fissure

Divides both the frontal lobe and parietal lobe above from the temporal lobe below.

PH 6C 88 Lateral Ventricle

The right and left lateral ventricles are structures within the brain that contain cerebrospinal fluid; part of the body's ventricular system, which acts as a continuation of the central canal of the spinal cord; contains cerebrospinal fluid.

PH 6C 89 Medial Lemniscus / Reil's Band / Reil's Ribbon

An ascending spinal tract, carrying sensory information to the thalamus.

PH 6C 90 Medial Longitudinal Fasciculus

A longitudinal bundle of fibres extending from the mesencephalon into the cervical segments of the spinal cord; involved in innervating the external eye muscles, and innervating the musculature of the neck.

PH 6C 91 Nucleus Ambiguus

Contains the cells bodies of nerves that innervate the muscles of the soft palate, pharynx, and larynx which are strongly associated with speech and swallowing.

PH 6C 92 Oculomotor Nucleus

In the midbrain; the nerve controls most of the eye muscles.

PH 6C 93 Pia Mater

The delicate innermost layer of the meninges, which encloses the cerebrospinal fluid and so helps to protect and cushion the brain; allows blood vessels to pass through and nourish the brain. The space created between blood vessels and pia mater functions as a lymphatic system for the brain.

PH 6C 94 Pontine Tegmentum

A part of the pons of the brain involved in the initiation of REM sleep.

PH 6C 95 Pretectal Nucleus

Part of the subcortical visual system; involved primarily in mediating behavioural responses to acute changes in ambient light such as the pupillary light reflex, the optokinetic reflex, and temporary changes to the circadian rhythm.

PH 6C 96 Pyramidal Neuron, Hippocampus

The primary excitation units of the prefrontal cortex and the corticospinal tract; also found in the cerebral cortex and the amygdala.

PH 6C 97 Subarachnoid Cavity / Subarachnoid Space

The space between the arachnoid membrane and pia mater that is occupied by spongy tissue consisting of trabeculae (delicate connective tissue filaments) and intercommunicating channels in which the cerebrospinal fluid is contained.

PH 6C 98 Superior And Inferior Parietal Lobules

The superior parietal lobule is involved with spatial orientation, receiving visual input as well as sensory input from the hands; also involved with other functions of the parietal lobe in general. Inferior parietal lobe involved in the perception of emotions in facial stimuli, and interpretation of sensory information.

PH 6C 99 Third Ventricle

One of four connected cavities comprising the ventricular system within the human brain, containing cerebrospinal fluid.

PH 6C 100 Trochlear Nucleus

Nuclei in midbrain provide motor impulses that control eyeball movement, via the trochlear nerves (IV cranial nerves).

PH 6C 101 White Matter / Arbor Vitae

In the brain and superficial spinal cord, consisting mostly of glial cells and myelinated axons that transmit signals from one region of the cerebrum to another and between the cerebrum and lower brain centres.



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