西亚试剂® Xiya Reagent 说明书

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化 学 品 安 全 技 术 说 明 书

填表时间 2019-12-26

打印时间 2025-04-20

MSDS标题

ZIDOVUDINE MSDS报告

产品标题

3’-叠氮-3’-脱氧胸甙

CAS号

30516-87-1

化学品及企业标识

PRODUCT NAME

ZIDOVUDINE

NFPA

Flammability	1
Toxicity	2
Body Contact	0
Reactivity	3
Chronic	2

SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4

PRODUCT USE

Antiviral agent used in the management of AIDS and AIDS- related complex. Pyrimidine nucleoside analog and inhibitor of reverse transcriptase. Normally taken by mouth.

SYNONYMS

C10-H13-N5-O4, "thymidine, 3'-azido-3'-deoxy-", "thymidine, 3'-azido-3'-deoxy-", 3'-azido-3'-deoxythymidine, 3'-azido-3'-deoxythymidine, azidothymidine, AZT, "BW-A 509U", Retrovir, "antiviral/ antiretroviral / anti-HIV/ AIDS"

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Limited evidence of a carcinogenic effect.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre- existing organ (e.g. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality (death) rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern. Considered an unlikely route of entry in commercial/industrial environments. Lactic acidosis (which produces a number disturbances in tissues and the central nervous system) and severe enlargement of the liver (hepatomegaly), with fatty degeneration (steatosis), including fatal cases, have been reported with the use of antiretroviral nucleoside analogues (NRTIs) alone or in combination. A majority of these cases have been women. Lactic acidosis occurs when cells of the body are unable to convert food into usable energy. As a result, excess acid accumulates in the body and vital organs such as the liver and pancreas may be damaged. Elevated serum levels of lactic acid (hyperlactataemia) are common in individuals undergoing NRTI therapy; generally the condition is mild and reversible and is likely to result, in greater part, from hepatic rather than muscle dysfunction (though this remains conjectural). Clinical symptoms include abnormal fatigue, tachycardia (rapid heart beat), abdominal pain, weight loss, peripheral neuropathy (surface nerve damage) and more specifically exercised induced dyspnea (shortness of breath) despite effective antitretroviral treatment. Functional respiratory tests show a metabolic deviation towards anaerobiosis. Ultrastructural mitochondrial abnormalities have been seen in several patients undergoing NRTI therapies. There was a marked decrease in complex IV activity in muscle biopsies consistent with mitochondrial dysfunction. Sometimes fatal pancreatitis (a pain in the stomach area progressing to the back), paraesthesias (burning,

pricking, tingling sensations) and peripheral neuropathies (burning or numbing of the hands and feet) have been reported in mono- or combination therapies. Hypersensitivity reactions (anaphylaxis), some severe and life-threatening, may occur. Hypersensitivity might produce fever, skin rash, urticaria, fatigue, gastrointestinal symptoms such as nausea, vomiting diarrhoea, abdominal pain and respiratory symptoms such as sore throat, shortness of breath and cough. Haemic and lymphatic dyscrasias (including anaemia, lymphadenopathy and splenomegaly) are seen in some settings whilst musculoskeletal symptoms, such as weakness and rhabdomyolysis, are seen on occasion. NRTIs may also be important in inducing subcutaneous fat wasting (lipoatrophy/lipodystropy) when used in combination therapies with protease inhibitors. Patients receiving highly active antiretroviral therapy (HAART), generally a combination of reverse transcriptase and protease inhibitors, frequently develop lipodystrophy with elevated levels of serum cortisol, lowered levels of serum DHEA (dehydroepiandrosterone) and increased levels of atherogenic lipids (important in the pathogenesis of arteriosclerosis). In one study researchers have also identified lipid abnormalities associated with coronary heart disease, along with alterations in glucose and insulin metabolism amongst patients undergoing HAART. There have been reports of increased bleeding, including spontaneous skin haematomas and haemarthrosis in haemophiliacs given protease inhibitors. Antiretroviral nucleoside analogues may act as reverse transcriptase inhibitors (NRTIs) or introduce themselves into viral DNA/RNA; in either case DNA chain elongation is disturbed during cell division.

EYE

Although the material is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.

Principal routes of exposure are usually by skin contact/absorption and inhalation of generated dust. Prolonged use has been associated with symptomatic myopathy similar to that produced by human immunodeficiency virus. When zidovudine was administered orally to mice, late-appearing vaginal neoplasms (after 19 months) occurred in animals receiving 120 mg/kg/day. Oral teratology studies showed no evidence of teratogenicity in rats and rabbits.