

Erratum

There appears to be some ambiguity regarding the nomenclature of the lymphatic staining agents patent blue and isosulfan blue. The article "Why Certain Dyes Are Useful for Localizing the Sentinel Lymph Node," by Tsopeles and Sutton (*J Nucl Med.* 2002;43:1377–1382), inadvertently linked these molecules, and other publications have interchanged these trade names (1,2) and mistaken Colour Index (CI) numbers (3) or Chemical Abstracts Service (CAS) registry numbers (4,5). The raw material patent blue is known by the synonyms sulphan blue, acid blue 1, patent blue VF, or food blue 3 and is defined by a CI number of 42045, a CAS number of 129-17-9, and a dye content of ~50% (6). Based on the structure (7) in Figure 1A, its chemical name is *N*-[4-[[4-(diethylamino)phenyl]-(2,4-disulphophenyl)methylene]-2,5-cyclohexadien-1-ylidene]-*N*-ethylethanaminium sodium salt or anhydro-4,4'-bis(diethylamino)-triphenylmethanol-2'',4''-disulphonic acid monosodium salt. Of the many listed synonyms of patent blue (8), one inclusion is patent blue V. Patent blue V has an alternative chemical structure that contains an additional hydroxyl functional group at position 5 (Fig. 1B) and is predominantly supplied as a calcium-chelated dimer. This compound is known as disulfine blue, acid blue 3, patent blue violet, or food blue 5 and has a CI number of 42051 and a CAS number of 3536-49-0, although no dye content is stated by a manufacturer (9). Based on the unchelated structure, its chemical name is *N*-[4-[[4-(diethylamino)phenyl]-(2,4-disulfo-5-hydroxyphenyl)methylene]-2,5-cyclohexadien-1-ylidene]-*N*-ethylethanaminium sodium salt or anhydro-4,4'-bis(diethylamino)-triphenylmethanol-5''-hydroxy-2'',4''-disulphonic acid monosodium salt. Isosulfan blue is a structural isomer of patent blue (Fig. 1C) in which the 2 sulfonic acid groups exist at the 2,5-positions of the phenyl ring (10). The proposed United States Adopted Name of this compound is isosulfan blue, and although no CI number has been assigned to it, there is a CAS number of 68238-36-8 and a dye content of 90% (2). The dyes in their pharmaceutical form are commercially available as contrast agents for visualizing lymphatic vessels. These products include bleu patente V sodique 2.5% w/v solution (Bleu Patenté V; Guerbet) in Australia and Europe, patent blue sodium injection 2.5% w/v solution (Therapex; E-Z-EM) in Canada, and isosulfan blue 1.0% w/v solution (Lymphazurin; U.S. Surgical/Tyco International) in the United States. When the names patent blue, patent blue V, and isosulfan blue have been used indiscriminately to describe the agent of choice, the authors suggest that reference to the dye employed should accurately reflect the correct chemical structure by confirmation with its distinct CAS number.

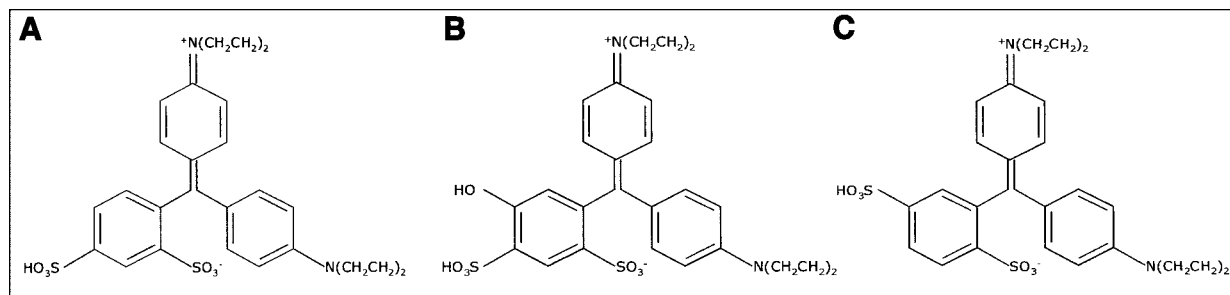


FIGURE 1. Chemical structures of patent blue, CAS 129-17-9 (A); patent blue V, CAS 3536-49-0 (B); and isosulfan blue, CAS 68238-36-8 (C).

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