

New Propofol derivatives for Anesthesia

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Technology description

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Researchers at the University of Iowa have created a family of propofol derivatives through the modification of the propofol molecule. **These new compositions have the potential for short duration anesthetic action. In addition, they may also provide a distinct advantage during onset and offset of anesthesia** . However, the compounds are not progressed to that point. MB003 was tested by IV injection into rats and found to cause a significant short term anesthesia (loss of righting reflex) compared to propofol and at a reasonable dose.

Background:

Alkyl phenols have a broad range of medicinal properties ranging from central nervous system (CNS) effects to antioxidant activities. The effects of alkyl phenols on the CNS are generally sedative in nature. For example, propofol is used as an anesthetic agent in both humans and animals. This compound also is a muscle relaxant, anti-epileptic, anti-emetic, anti-spasmodic and bronchodilator. Although propofol is considered to be relatively safe, side effects have been reported, including dose-dependent hypotension, hypertriglyceridemia and pancreatitis. There are shortages of compounds that cause anesthesia and sedation while still providing the properties of rapid action anesthesia. As a result, there is a need for new anesthetics that are short acting and don't have the attributes of pain upon injection or need for formulation in lipid emulsion vehicles.

Advantages

Potential for significant short term anesthetic action compared to a reasonable dose of propofol.

Anticipated that these novel compounds may also produce other CNS effects including anxiolysis and sedation.

Institution

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