Lusupultide

Also called: Venticute; rSP-C; rSP-C surfactant; recombinant surfactant protein C; B-9420-001

What it is

Lusupultide is recombinant surfactant protein C, the 34-residue human sequence with three substitutions (PMID 9609732), given with phospholipids as the surfactant Venticute. In adults with ARDS it improved oxygenation without changing survival (PMIDs 15329426, 18689599), and a trial of 843 patients with severe pneumonia or aspiration found no benefit, probably because a new preparation step inactivated it (PMID 21148720). It is not approved.

Approval status

Not FDA Approved. Not approved: Drugs@FDA and the openFDA label endpoint return no record for lusupultide or Venticute (searched November 3, 2026). Five trials in ARDS improved oxygenation without a survival benefit (PMIDs 15329426, 18689599), and the phase 3 trial NCT00074906 in severe pneumonia or aspiration (Takeda, completed 2008) found no benefit (PMID 21148720); no later trial is registered.

Dosing, as printed in the page's Recommended Dosing box

Used in human trials

No manufacturer dose exists for this use: these are amounts given in published trials, not recommendations.

Protocol and source	Dose	Frequency	Duration	Route
Study: ARDS, pooled analysis of five trials **[Human study]** PMID 18689599	50 mg/kg per dose	Up to 4 doses	Within 24 hours	Intratracheal, through the breathing tube

Educational information, not medical advice. Each dose above is tagged with its source: an approved label, a published human study, animal data, or amounts reported by users. None is a recommendation for you. An unapproved compound has no established safe or effective human dose, and products sold for "research use only" are not made or tested for people. Talk to a doctor before acting on anything on this site, including before you start, stop or change any medicine or dose.

Key human evidence

The first 3 of the 5 human studies carded on the page (29 study cards in all):

• **First North American trial** (Human, 2003). In a phase I/II trial, adults with ARDS were randomised to usual care or usual care plus the rSP-C surfactant at one of two dose levels, each given four times in 24 hours. The instillations were well tolerated but brought no measurable clinical benefit. Lung washings at 48 hours held the drug's components and less interleukin-6 than controls, a sign of reduced inflammation, yet their surface tension was no better; by 120 hours the drug could no longer be detected. The authors suggested larger doses for longer. **PMID 12649125**

• **Two phase 3 trials in ARDS** (Human, 2004). In two double-blind multicentre trials, 448 adults with ARDS of many causes received usual care alone or usual care plus up to four doses of the surfactant into the airway within 24 hours. Survival at 28 days was 66% overall and did not differ between groups, and neither did time on the ventilator. Blood oxygen levels improved more with the surfactant during the 24-hour treatment window, which led the investigators to propose a longer course. **PMID 15329426**

• **What happens to the lung's own surfactant** (Human, 2007). In a randomised pilot trial of 31 patients with ARDS given the surfactant into the bronchi, gas exchange improved and the make-up of phospholipids and proteins in lung washings came close to normal, but the ability of that material to lower surface tension recovered only partly. ARDS lungs carried about twice the normal amount of neutral lipids, and adding such lipids to the drug in the laboratory weakened it in a dose-dependent way, one possible reason for the limited effect. **PMID 17287298**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 3, 2026, 3 records) found none in people. That is not evidence that it is safe to combine with anything.

Side effects and cautions

Reported side effects	Contraindications and cautions
• Instillation was well tolerated in the first North American trial (PMID 12649125) • No difference in 28-day deaths or time on the ventilator between treated and untreated patients in any trial (PMIDs 15329426, 21148720) • No anaphylactic reaction in guinea pigs sensitised and then challenged with it, though a mild eosinophil infiltrate and higher lung weight appeared (PMID 10661808) • Briefly more dying eosinophils at one hour in the laboratory, not seen later (PMID 19295237)	• Not a medicine: no lusupultide product is approved anywhere in the sources read • Only ever given through a breathing tube to ventilated patients in intensive care • No survival benefit in ARDS, and the last trial showed no benefit at all (PMID 21148720) • How the suspension was prepared changed how well it worked, so a product's handling matters as much as its contents (PMID 21148720) • Not tested in premature babies in any published human trial

Five questions to ask

1. Lusupultide is listed here as "Not FDA Approved". What does the evidence on this sheet mean for someone in my situation, and is there an approved treatment I should consider instead?
2. Here are the medicines and supplements I take. Do any of them interact with Lusupultide? This sheet records none published, which does not mean none exist.
3. Which side effects should make me stop and call you, for example instillation was well tolerated in the first north american trial?
4. Do any of the cautions on this sheet apply to me, such as: Not a medicine: no lusupultide product is approved anywhere in the sources read?
5. What should we check before I start and while I am on it (blood tests, blood pressure, weight), and how often?

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