Lancovutide

Also called: Duramycin; Moli1901; MOLI-1901; Leucopeptin; PA48009; Lancovutida

What it is

Lancovutide, better known in the laboratory as duramycin, is a 19-residue lantibiotic that binds phosphatidylethanolamine in cell membranes (PMID 17483159) and raises chloride secretion across airway epithelium by a route that does not need CFTR (PMID 2169195). Inhaled, it changed nasal chloride transport in a 2004 phase 1 study and raised FEV1 at the highest dose in a 24-patient phase 2 trial (PMIDs 14718433, 17494794), but a 161-patient trial found no effect on lung function (PMID 32888826). It is approved nowhere and holds an EU orphan designation from 2002.

Approval status

Not FDA Approved. Not approved anywhere. Drugs@FDA and the openFDA label endpoint return no record for lancovutide, duramycin or Moli1901 (searched November 4, 2026). The EU register holds orphan designation EU/3/02/120, granted on November 13, 2002 for cystic fibrosis and still listed as positive at its last update in February 2022; the same record notes US orphan drug status for cystic fibrosis granted on December 11, 1997. An orphan designation is not an approval. The only registered trial, NCT00671736, is the phase 2 study that completed in July 2009 and reported no improvement in lung function (PMID 32888826); no later study 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: the 161-patient phase 2 trial **[Human study]** PMID 32888826	2.5 mg	Once a day, every other day, or twice a week (three arms)	8 weeks	Inhaled (nebulised)
Study: five-day rising-dose phase 2 **[Human study]** PMID 17494794	0.5, 1.5 or 2.5 mg daily	Once a day	5 days	Inhaled (nebulised)
Study: single-dose pharmacokinetics in healthy men **[Human study]** PMID 18500510	7.5 mg	Once	Single dose	Inhaled (nebulised)

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 4 human studies carded on the page (25 study cards in all):

• **First study in people: nasal superfusion** (Human, 2004). Four volunteers without cystic fibrosis and four patients with it had the peptide, or placebo, run across the lining of the nose at rising concentrations from 0.01 to 10 micromolar, while the electrical potential across that lining was recorded every minute. Nothing visible happened to the nose, lavage fluid showed no sign of damage, and lung function did not change. The potential shifts suggested both an immediate and a lasting increase in chloride transport in the volunteers, with a dose relationship; in the patients the immediate response faded faster and no clear dose relationship emerged from four people. **PMID 14718433**

• **Phase 2: five days inhaled, a gain at the top dose** (Human, 2007). Twenty-four adults with stable cystic fibrosis at one centre inhaled 0.5, 1.5 or 2.5 mg a day for five consecutive days, or placebo, in a double-blind rising-dose design. FEV1 improved significantly against placebo in the 2.5 mg group. Tolerance was good in all but two patients: one had a transient sharp fall in FEV1 after inhaling that resolved by itself, and one had passing numbness of the throat while inhaling. The drug was not detectable in the plasma of the highest-dose group. The authors concluded that a cumulative 12.5 mg was safe and that the lung-function effect justified efficacy trials. **PMID 17494794**

• **Where an inhaled dose goes, and for how long** (Human, 2008). Six healthy men each inhaled one nebulised 7.5 mg dose and then underwent bronchoscopy, so that the peptide could be measured in the cells of lavage fluid, mostly alveolar macrophages, and in brushings of bronchial lining. Its estimated half-life was about five days in the brush samples and between 25 and 91 days in lavage cells, where the peak concentration was roughly twenty times higher. None reached plasma, and a panel of fourteen cytokines in lavage fluid showed no inflammatory reaction. The authors read this as support for giving the peptide into the lung in cystic fibrosis. **PMID 18500510**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 4, 2026, 0 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
• In the 161-patient trial, inhalation was judged safe overall, but adverse events, especially respiratory ones, were more frequent on the drug than on placebo (PMID 32888826) • One of 24 patients in the five-day trial had a sharp transient fall in FEV1 after inhaling, which recovered without treatment; another had passing numbness of the throat while inhaling (PMID 17494794) • No visible nasal irritation, no rise in lavage markers of damage and no change in lung function after nasal superfusion in eight people (PMID 14718433) • No inflammatory response in the lung after a single inhaled dose in six healthy men, measured as fourteen cytokines in lavage fluid (PMID 18500510) • Undetectable in plasma after inhalation in both the volunteer study and the highest-dose trial group, which limits the scope for effects outside the lung (PMIDs 18500510, 17494794) (1 more on the page)	• Only inside a clinical trial: it is approved nowhere, no trial is running, and it is not a product anyone can be prescribed • Its one adequately sized trial found no benefit on lung function or any secondary measure in cystic fibrosis (PMID 32888826) • Its effect on chloride secretion sits in a narrow concentration band and reverses above it; higher concentrations block chloride efflux and damage membranes (PMIDs 21091780, 1377492) • A single inhaled dose stays in airway cells for weeks to months, so an inhaled amount is not something that can be undone quickly (PMID 18500510) • The peptide labels and kills cells in culture at low micromolar concentrations, which is the other side of the same membrane activity (PMIDs 22543977, 26512767) (1 more on the page)

Five questions to ask

1. Lancovutide 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 Lancovutide? This sheet records none published, which does not mean none exist.
3. Which side effects should make me stop and call you, for example in the 161-patient trial?
4. Do any of the cautions on this sheet apply to me, such as: Only inside a clinical trial: it is approved nowhere, no trial is running, and it is not a product anyone can be prescribed?
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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