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ABSTRACT

The present invention provides a novel dry powder inhalation system suitable for transpulmonary administration. The dry powder inhalation system of the invention characterized by using a combination of:

(1) a vessel housing a freeze-dried composition that contains a single dose of an active ingredient, and has:

(i) a non-powder cake-like form,

(ii) a disintegration index of 0.015 or more, and

(iii) a property of becoming fine particles having a mean particle diameter of 10 microns or less or a fine particle fraction of 10% or more upon receipt of an air impact having an air speed of at least 1 m/sec and an air flow rate of at least 17 ml/sec; and

(2) a device comprising means capable of applying said air impact to the freeze-dried composition in said vessel, and means for discharging the powder-form freeze-dried composition that has been made into fine particles.