CRYSTAL PHARMA, INC.

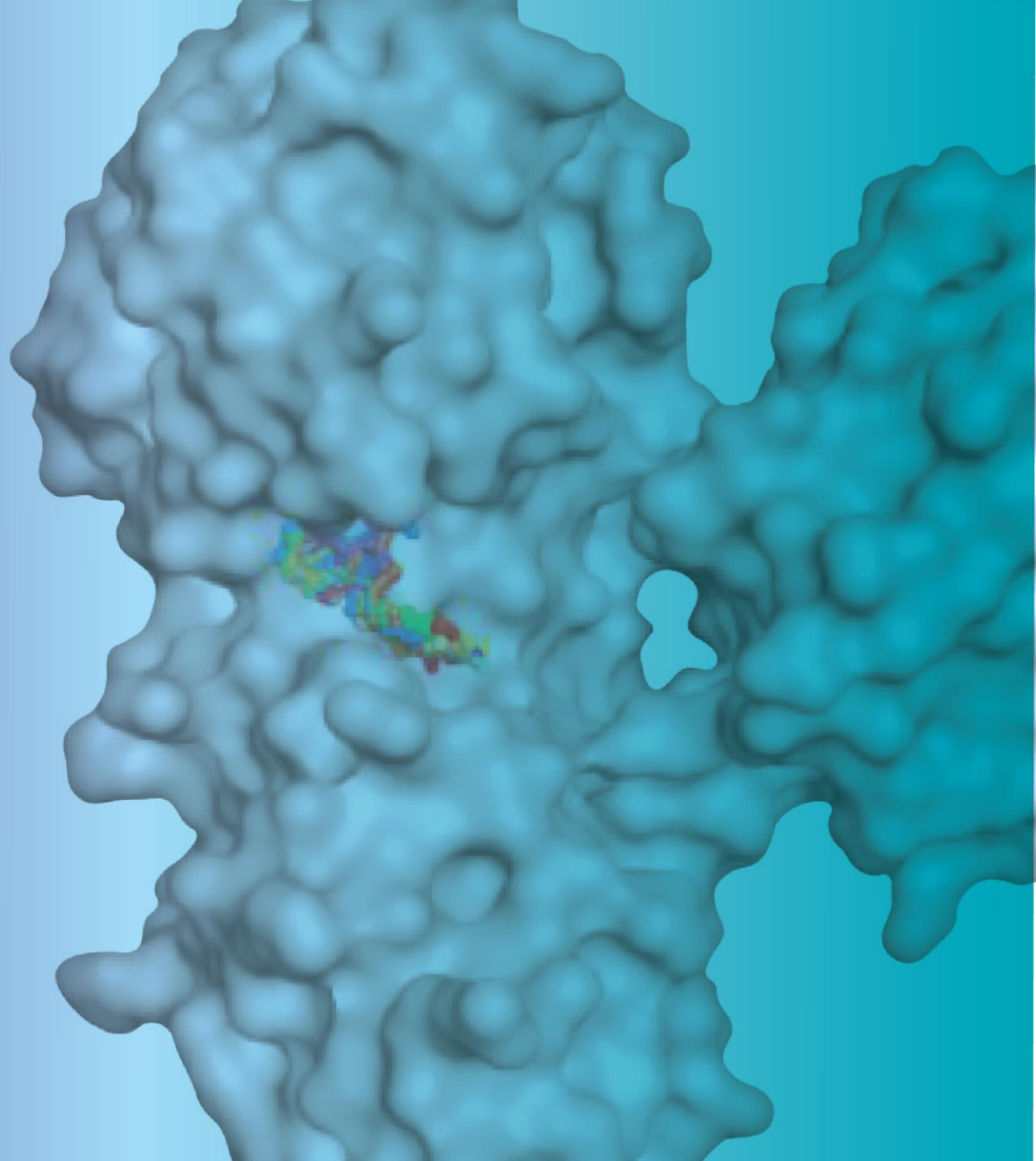
Taking a New Route: Development of novel inhaled and oral Polymerase PB2 Inhibitor, CC-42344

Sam Lee, Ph.D.

President & Co-CEO

World Vaccine Congress West Coast 2023

November 28 , 2023

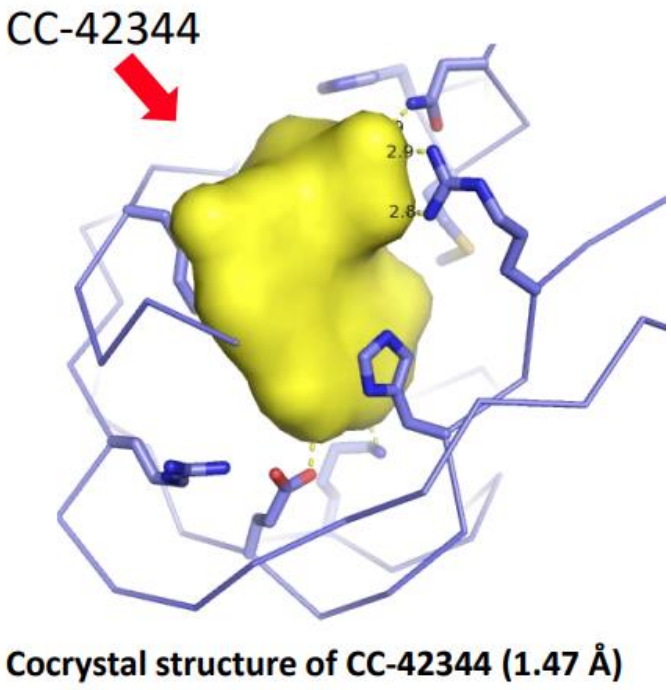


Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding the expected future characteristics and progress in our clinical programs, including our ongoing Phase 2a study for an oral influenza PB2 inhibitor, our anticipated initiation of a Phase 1 study for an inhaled influenza PB2 inhibitor in 2024, an an expected update in our influenza A/B program collaboration with Merck Sharp & Dohme Corp. (“Merck”) in 2024.

Forward-looking statements are prefaced by words such as “anticipate,” “expect,” “plan,” “could,” “may,” “will,” “should,” “would,” “intend,” “seem,” “potential,” “appear,” “continue,” “future,” believe,” “estimate,” “forecast,” “project,” and similar words. Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. We caution you, therefore, against relying on any of these forward-looking statements. Our actual results may differ materially from those contemplated by the forward-looking statements for a variety of reasons, including, without limitation, the risks arising from our ability to proceed with studies including recruiting volunteers for and procuring or manufacturing materials for such studies by our clinical research organizations and vendors, the results of the Phase 2a and Phase 1 studies referred to above, the risk that Merck may cease to provide support for further development of the influenza A/B program under the license and collaboration agreement, general risks arising from clinical trials, receipt of regulatory approvals, regulatory changes, development of effective treatments and/or vaccines by competitors, including as part of the programs financed by the U.S. government, and potential mutations in the viruses we are targeting which may result in variants that are resistant to a product candidate we develop. Further information on the risk factors that could cause actual results to differ materially from those expressed or implied by forward-looking statements, is contained in our filings with the Securities and Exchange Commission, including our Annual Report on Form 10-K for the year ended December 31, 2022. Any forward-looking statement made by us in this presentation speaks only as of the date on which it is made. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

CC-42344: Potential Influenza Therapeutic and Prophylactic Treatments

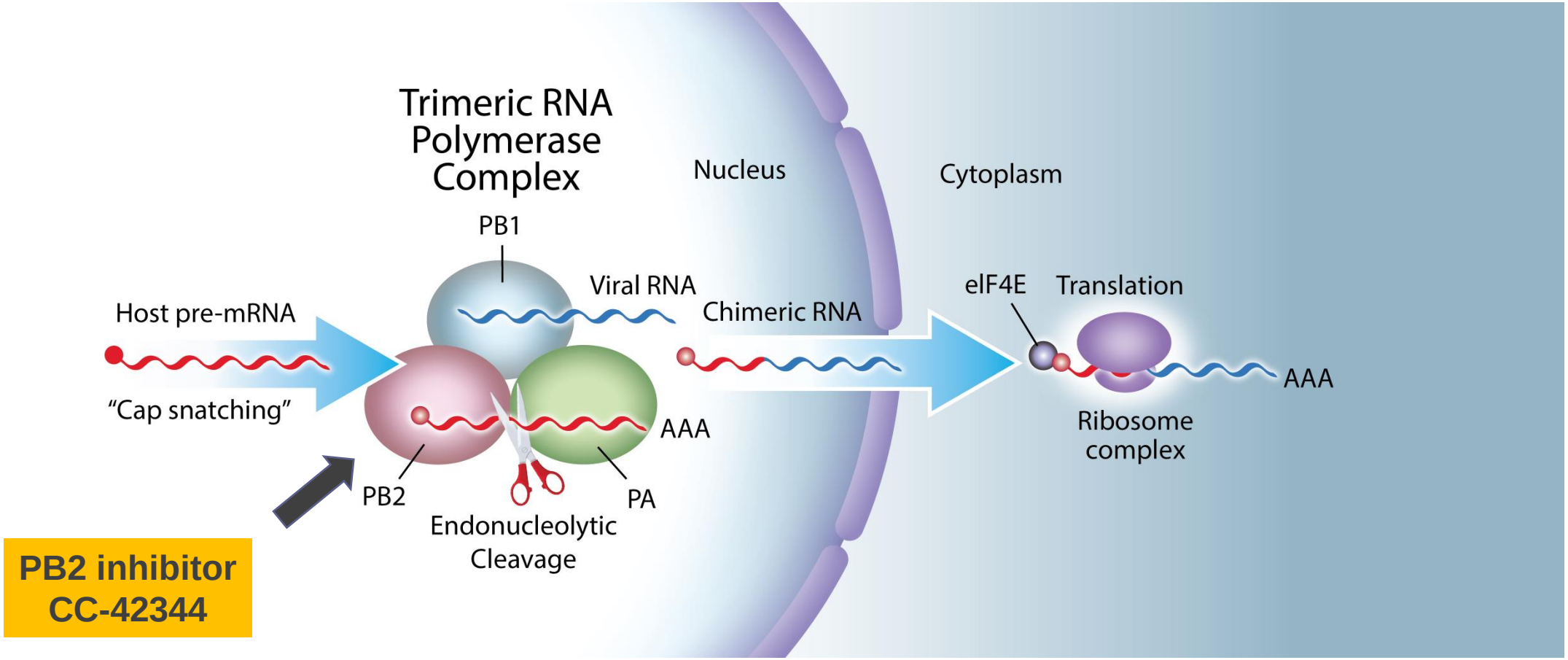


Cocrystal structure of CC-42344 (1.47 Å)

Properties of CC-42344

- Favorable safety profile
- Potent, broad-spectrum activity against pandemic and seasonal strains
- High barrier to resistance
- Superior pulmonary pharmacology: high exposure and a long half-life
- One molecule for therapeutics and prophylaxis
- Oral inhibitor: Phase 2a ongoing
- Inhaled inhibitor: Phase 1 planned in 2024

Mechanism of Action:
CC-42344 Blocks The First Step of Influenza A Viral Replication



Boivin S et al. J. Biol. Chem. 2010;285:28411-28417

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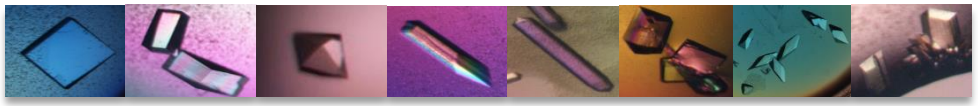
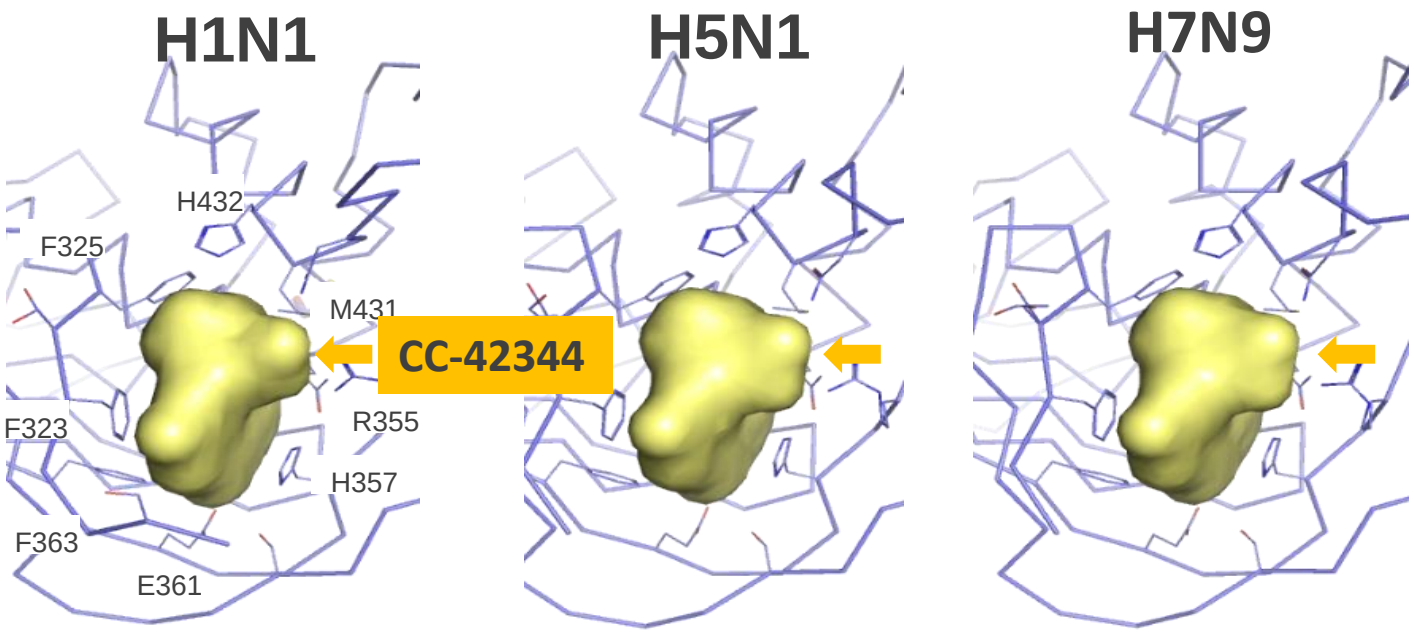
CC-42344 Binds to Highly Conserved Active Site of Influenza A PB2 Protein

Cocrystal proprietary drug discovery platform technology



Highly pathogenic influenza A strains



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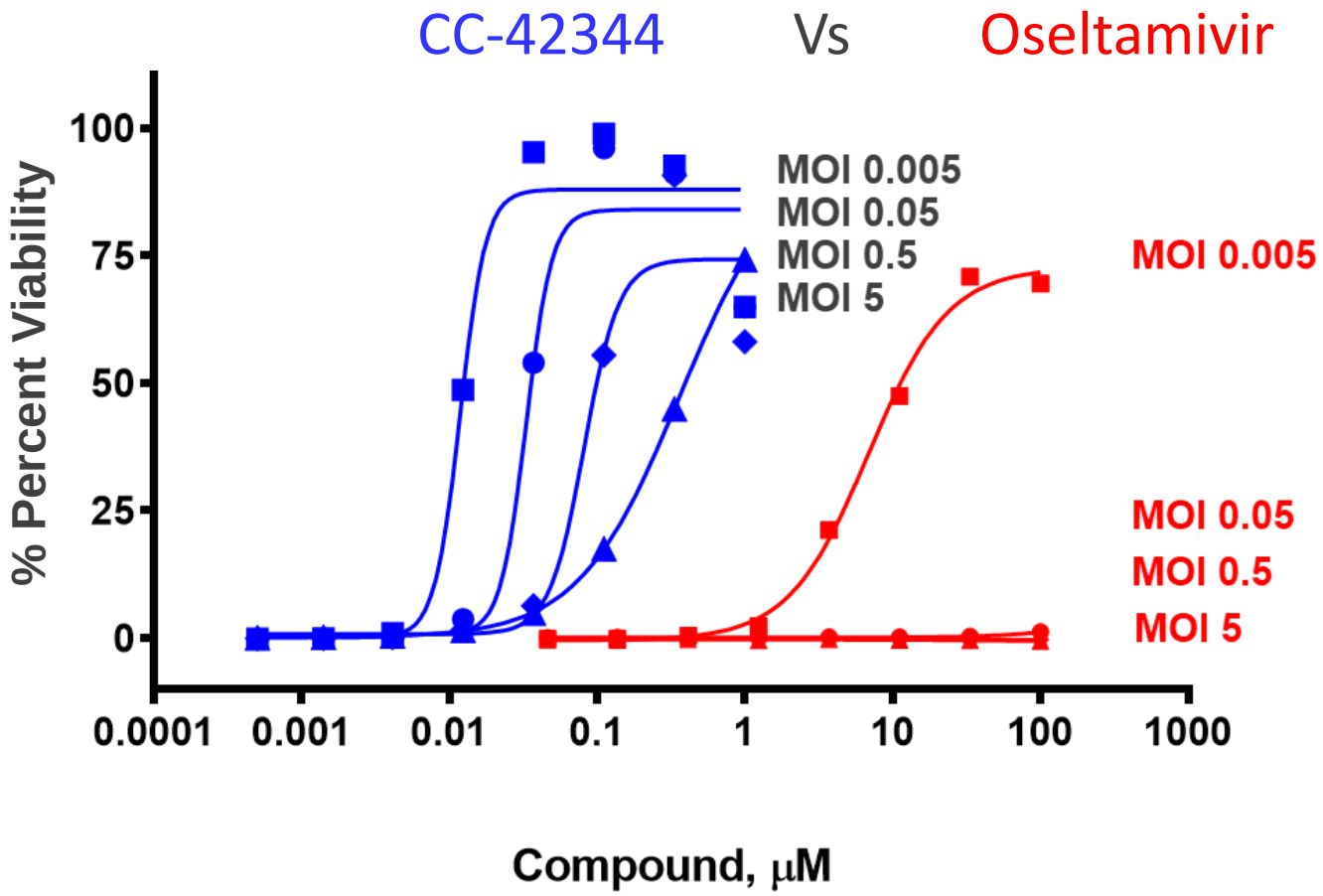
CC-42344 Shows Broad-spectrum Antiviral Activity Against Pandemic and Seasonal Influenza A Strains

Influenza Serotype	Strain	CC-42344 EC_{50} (nM)
H1N1	A/PR/8/34	**1**
Pandemic H1N1	California/04/2009	**0.5**
H1N1	A1/Denver/1/57	**3**
H1N1	A/Fort Monmouth/1/47	**2**
H1N1	A/NY/18/09	**5**
H3N2	A/AICHI/2/68	**0.2**
Highly pathogenic Avian H5N1	Duck/MN/1524/81	**<3.2**
Highly pathogenic Avian H5N1	Hong Kong/213/2003	**4.5**
Highly pathogenic Avian H5N1	Thailand/16/2004	**<3.2**
Highly pathogenic Avian H7N7	Netherlands/219/2013	**5.6**
Highly pathogenic Avian H7N9	Anhui/1/2013	**<3.2**
H1N1- Oseltamivir resistant	A/HK/2369/09 H274Y	**9**
H3N2-Oseltamivir resistant	A/Wuhan/395/95	**0.5**
H1N1- Baloxavir resistant (I38T)	A/PR/8/34 I38T	**0.5**

CC-42344 Exhibits Superior Antiviral Activity Compared to Oseltamivir

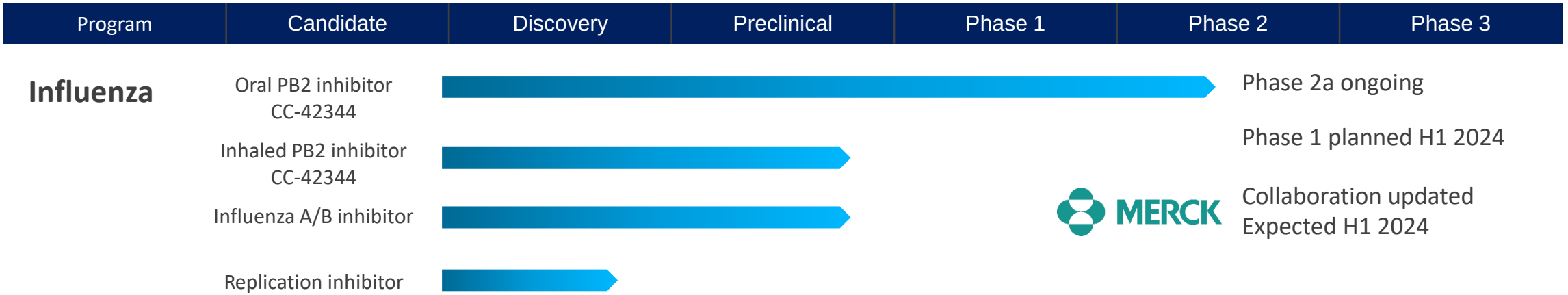
CC-42344 exhibits superior antiviral activity at higher MOIs (multiplicity of infection)



Cocrystal Structure-Based Drug Discovery Platform Technology Delivers Multiple Broad-Spectrum Antiviral Leads, Influenza and Others

Cocrystal technology uniquely offers:

1. Systematic analysis of drug binding pockets for broad-spectrum antivirals
2. Rapid crystal structure determination and computational drug design
3. Structural insight into antiviral drug resistance
4. Novel clinical drug candidates



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Oral CC-42344: Phase 1 Data Demonstrates Favorable Safety Profile, Advancing to Phase 2a

Phase 1 site: Linear Clinical Research – Harry Perkins Research Institute, Perth, Australia

Participants:

- Single-center, randomized, double-blind, placebo-controlled
- Single-ascending dose, multiple-ascending dose; 7-day nontreatment follow-up period
- Healthy adult volunteers
- Each cohort comprised of 8 subjects; 6, CC-42344 and 2, placebo
- N = 56; 32, SAD; 24, MAD

Single ascending dose (SAD) → 100 mg | 200 mg | 400 mg | 800 mg

4 cohorts of 8 participants each (24 active; 8 placebo)
1 cohort (400 mg) assessed food effects

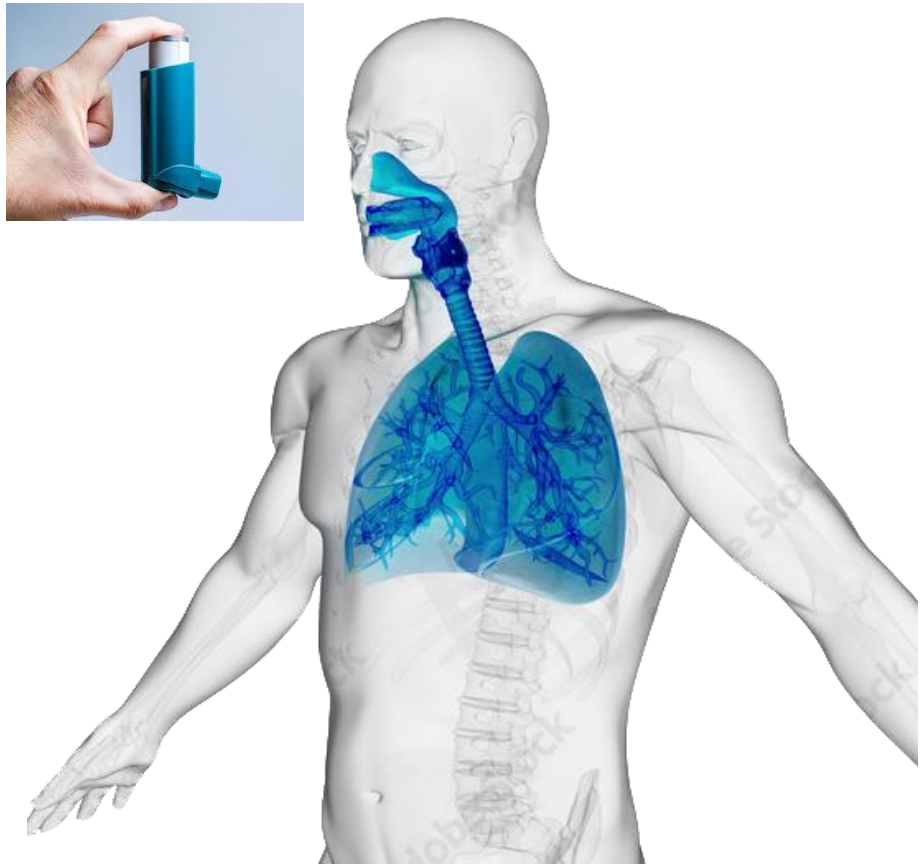
Multiple ascending dose (MAD) → 50 mg | 100 mg | 200 mg

3 cohorts of 8 participants each (18 active; 6 placebo)
Once daily x 14 days

Endpoints

- Adverse events (AEs), physical exam, viral signs, ECGs, and lab indices
- Food effect

Development of Novel Inhaled PB2 Inhibitor, CC-42344

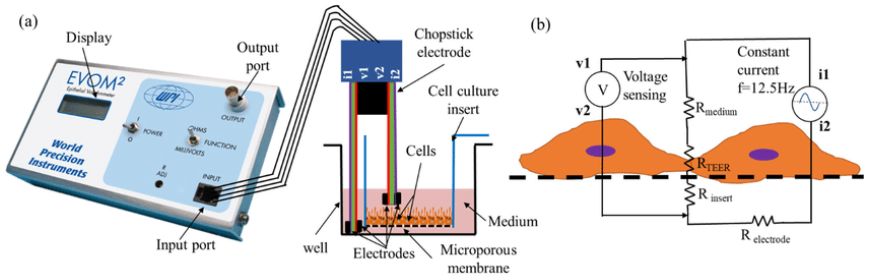


Advantages of inhalation antiviral therapy

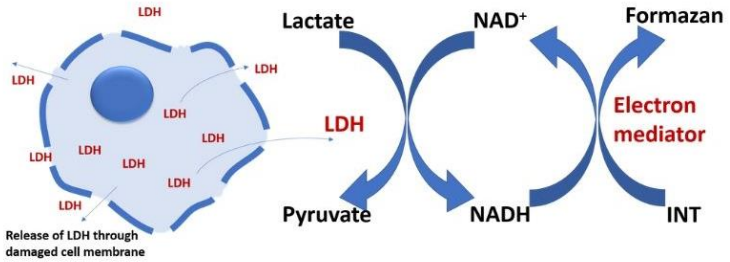
- Directly targets infected respiratory epithelial cells
- Achieves higher accumulation of drug in the pulmonary system
- Produces rapid clinical response
- Reduces potential systemic side effects

Evaluating Toxicity in In Vitro Human Upper Airway Epithelium

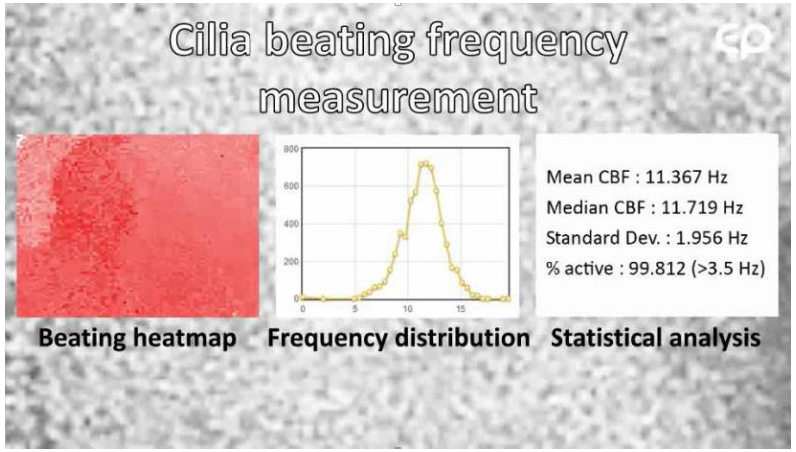
(A) Trans-epithelial electrical resistance determination



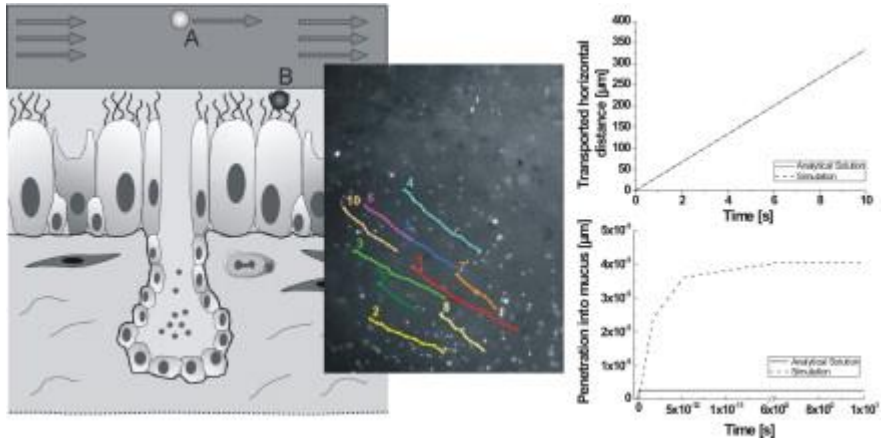
(B) Lactate dehydrogenase



(C) Cilia beating frequency determination



(D) Mucocilliary clearance determination



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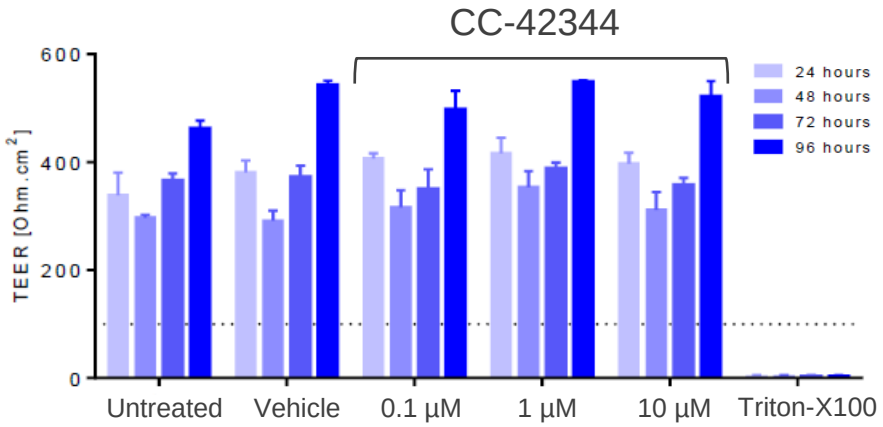
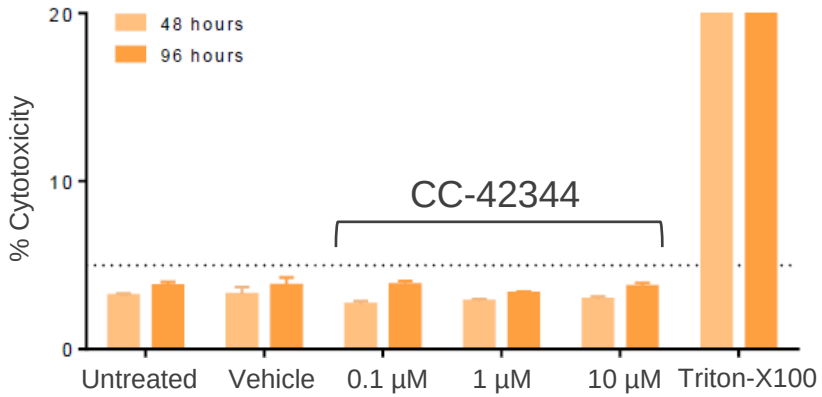
CC-42344 Showed Favorable Safety Profile in Human Upper Airway Epithelium

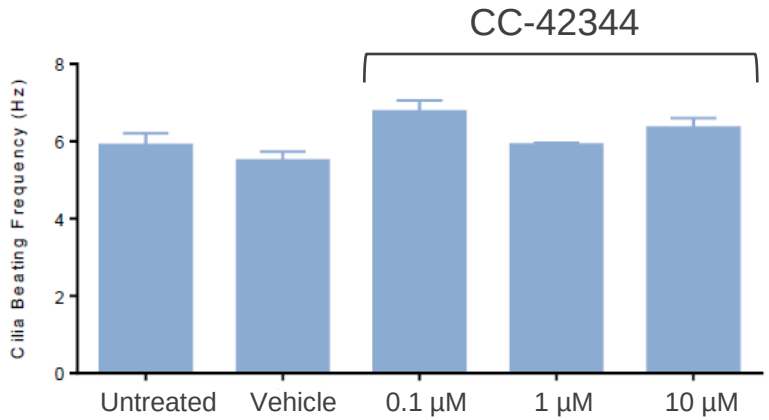
(A) Trans-epithelial electrical resistance determination



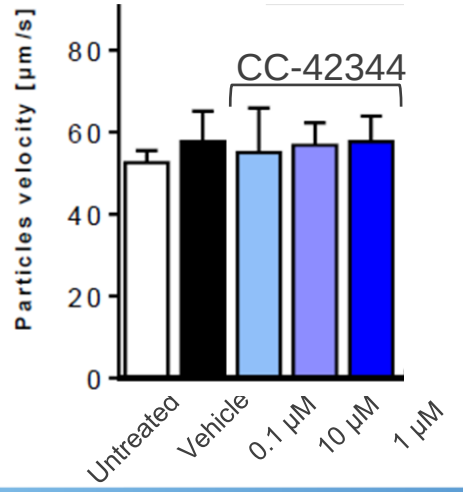
(B) Lactate dehydrogenase



(C) Cilia beating frequency determination



(D) Mucocilliary clearance determination



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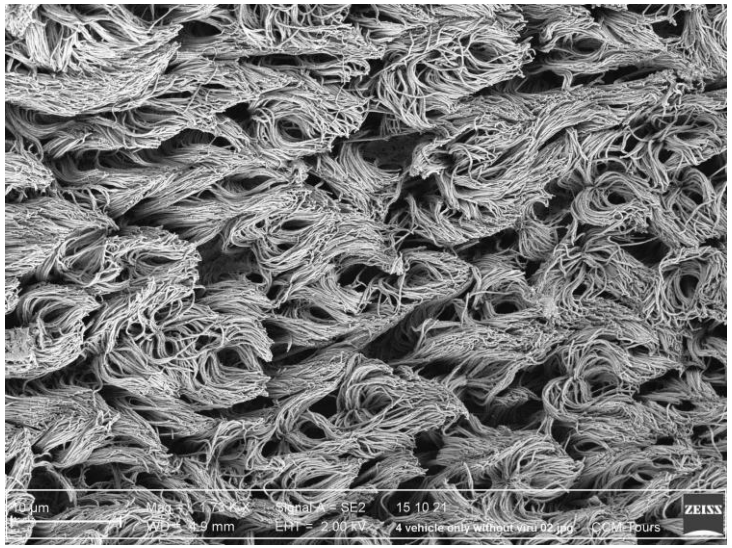
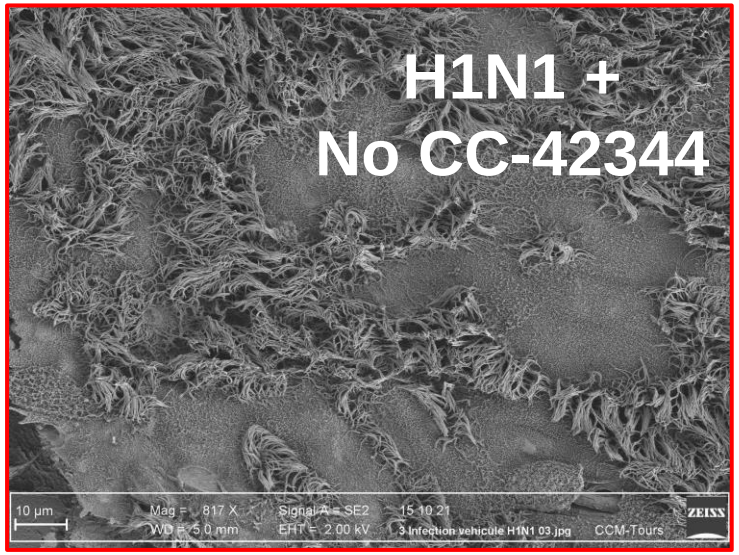
CC-42344 Shows Excellent Antiviral Activity in Influenza H1N1-Infected Human Upper Airway Epithelium

Uninfected human upper airway epithelia
by scanning electron microscopy

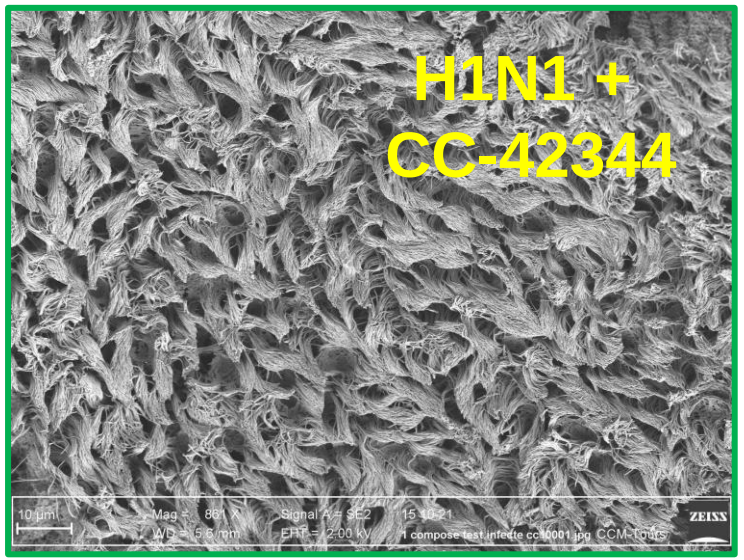


+ H1N1

No treatment



With CC-42344



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Oral Inhalation Formulation Development Completed

(A) Prototype dry powder manufacturing

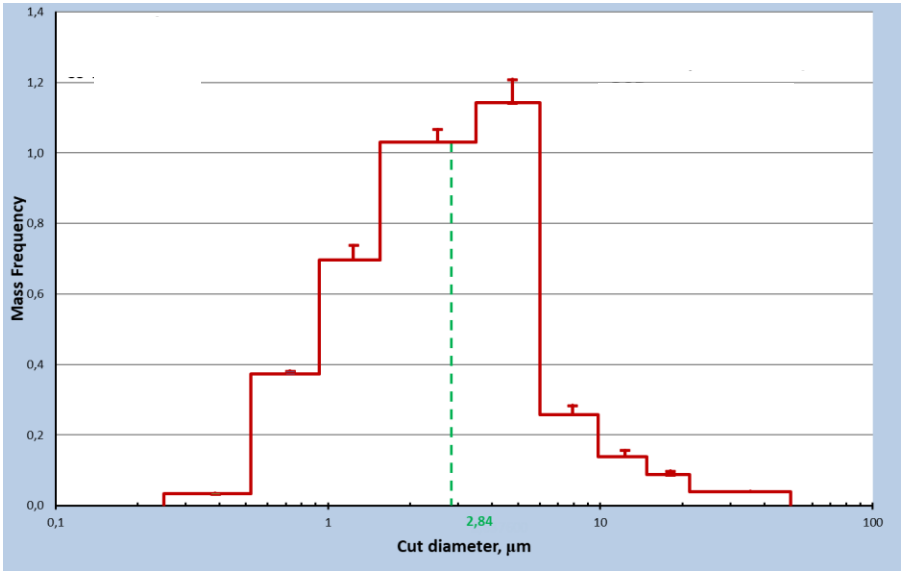
CC-42344 dry powder

CC-42344 in capsules

CC-42344 in Inhalers

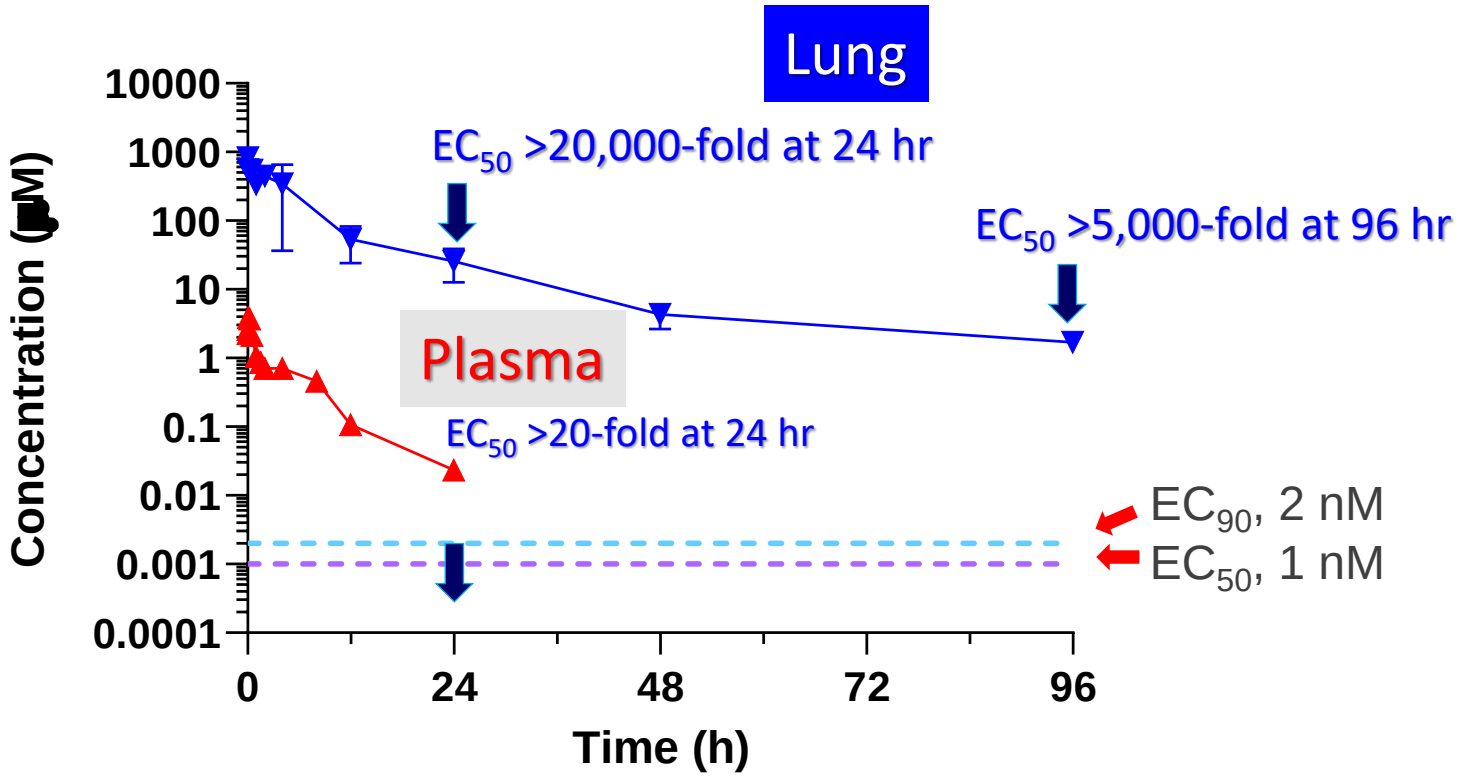
(B) Aerodynamic particle size distribution

MMAD = 2.84 ± 0.09 µm



Inhaled CC-42344: Potential Prophylactic and Therapeutic Treatment

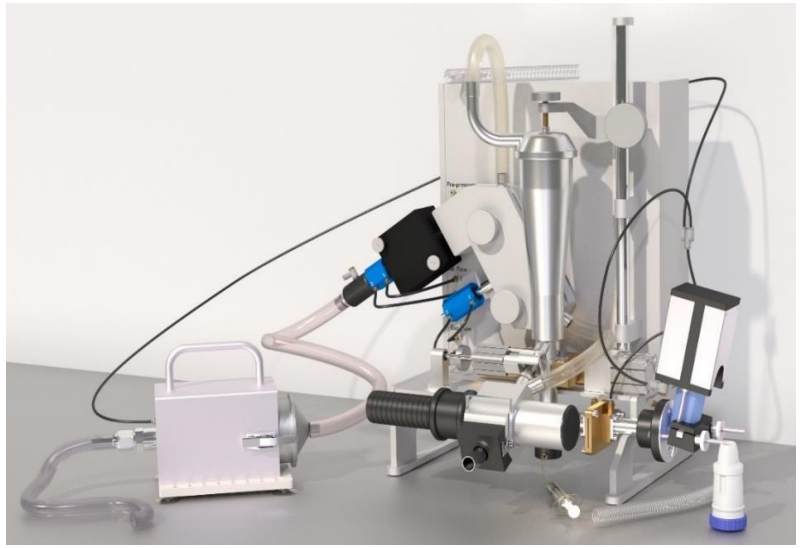
Inhaled CC-42344 achieves high exposure in lung

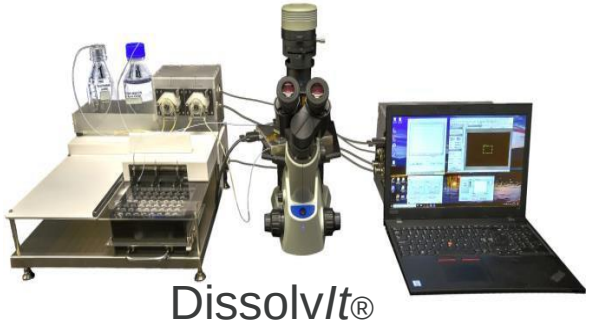


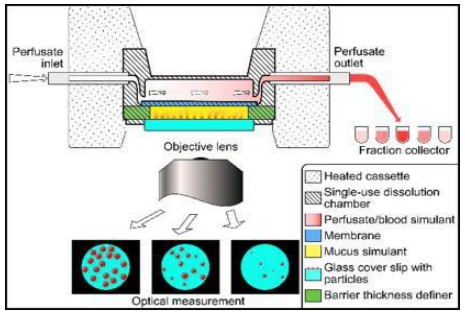
Mouse pharmacokinetic profile of CC-42344 dry powder (5 mg/kg), single intratracheal administration

CC-42344 In an Inhaler Device Showed Excellent Dissolution and Absorption Rates Using Precise Inhale Aerosol Generator and Dissol*v*I*t*®

Precise Inhale aerosol generator (Inhalation Sciences)



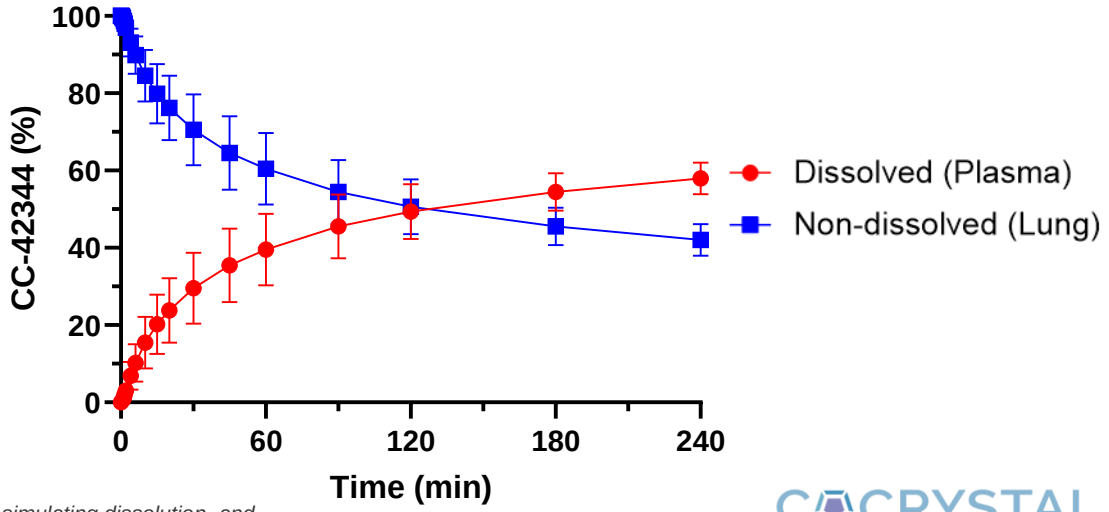




CC-42344

CC-42344

Simulated PK profile of CC-42344



Reference: Malmlöf, M., et al., *Effect of particle deposition density of dry powders on the results produced by an in vitro test system simulating dissolution- and absorption rates in the lungs.* Eur J Pharm Biopharm, 2019. **139**: p. 213-223.

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CC-42344: Potential Influenza Therapeutic and Prophylactic Treatment

SUMMARY

- Favorable safety profile
- Potent, broad-spectrum activity against pandemic and seasonal strains
- High barrier to resistance
- Superior pulmonary pharmacology: high exposure and long half-life, EC_{50} >5,000-fold at 96 hr after single administration
- Oral CC-42344: Phase 2a ongoing
- Inhaled CC-42344: Phase 1 planned in 2024

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