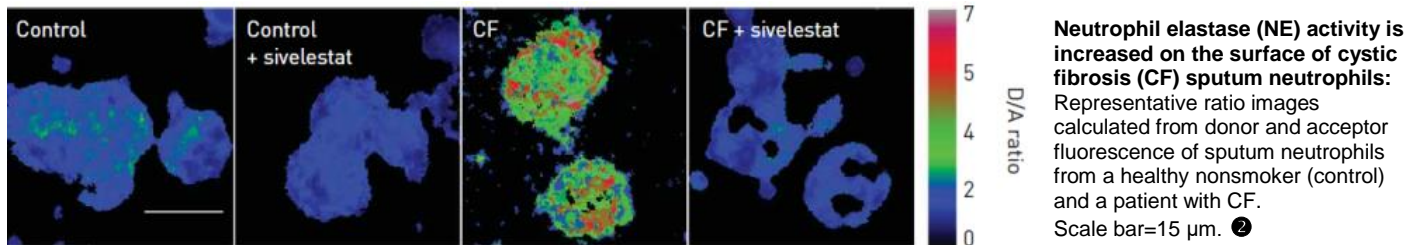


## Nemo FRET reporter



**Neutrophil elastase (NE) is a novel biomarker in patients with cystic fibrosis (CF) and potentially other chronic neutrophilic lung diseases such as COPD. Nemo is a FRET-based reporter system that detects NE activity on cell surfaces or in solution.**

NE is considered a key risk factor for severity of **cystic fibrosis (CF)** lung disease ②. Surface-bound NE activity is associated with lung disease severity in adult CF patients who exhibit high levels of neutrophilic airway inflammation ④.

To measure NE activity in solution, use the highly sensitive FRET reporter **Nemo-1**. On cell surfaces use the lipidated reporter **Nemo-2E**.

Nemo-1 was successfully used to assess the potential of native bronchoalveolar lavage fluid (BALF) from CF children.

NE activity is consistently increased on the surface of CF sputum neutrophils and is considered a marker for severity of lung disease in patients with CF. Recently, Nemo-2E was successfully used for a FRET readout by FACS (①). In addition, the probes are useful to monitor NE inhibitors on the microscope stage or in a plater reader format.

**The two reporters are available at these sizes:**

### FRET reporter Nemo-1:

**SC-0200:** 10 µL: 200 EUR  
 50 µL: 600 EUR

### Lipidated FRET reporter Nemo-2E:

**SC-0201:** 10 µL: 200 EUR  
 50 µL: 600 EUR

- ▶ 10 µL are sufficient for approx. **8 FACS- OR 12 microscopy** experiments
- ▶ soluble in buffer
- ▶ or use a stock solution in DMSO

### For your experiments

Sputum was separated from saliva and homogenised using 10% sputolysin. Sputum inflammatory cells were isolated and total immune cell count was performed. **Free NE-activity** was quantified in sputum supernatants using the soluble FRET probe **Nemo-1** and compared with activity levels determined by the chromogenic substrate MeO-Suc-AAPV-pNA.

**Surface-bound NE-activity** on sputum neutrophils was measured using the lipidated FRET reporter **Nemo-2E** and determined from the change in ratio of donor to acceptor fluorescence over time.

- ① Eur Respir J 2020; in press // doi.org//10.1183/13993003.02355-2019
- ② Eur Respir J 2018; 51: 1701910 // doi.org//10.1183/13993003.01910-2017
- ③ Journal of Investigative Dermatology (2018) 138, 1990e1998//doi:10.1016/j.jid.2018.03.1499
- ④ Am J Respir Crit Care Med. 2018 Oct 3:// doi: 10.1164/rccm.201803-0442OC
- ⑤ Am J Respir Crit Care Med. 2014 May 1;189(9):1082-92// doi: 10.1164/rccm.201311-1932OC.

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