

# OCUPATIONAL ASTHMA CAUSED BY POPPY SEEDS (*Papaver somniferum*)

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## INTRODUCTION

Some cases of occupational allergy due to CPS (concentrate of *Papaver somniferum* straw), and anaphylaxis due to the ingestion of poppy seeds have been published, but there is nothing in the literature regarding **occupational allergy caused by the manipulation of poppy seeds**.

The tiny kidney-shaped seeds is still widely used in Central Europe where it is legally grown. The seeds are used, whole or ground, as an ingredient in many foods - especially in pastry and bread, and they are pressed to yield poppy seed oil.

We now describe a case of occupational asthma caused by the manipulation of poppy seeds.

## METHODS

### CASE

A 27 year-old male who works in a morphine company (Alcaliber) manipulating CPS, separating the straw from the poppy seeds.

The patient was asymptomatic until 5 months before visiting our clinic, referring ocular and nasal congestion and respiratory problems twice a week.

The patient reported a worsening of symptoms some minutes after starting work, requiring the use of rescue bronchodilators 3 to 5 times a day during his work shift. The patient mentioned an 80% improvement in symptoms during vacations.

Occupational asthma and allergy study tests were performed.

## RESULTS

### Skin Prick Tests:

#### Standard battery of inhalant allergens:

*Alternaria* 13 mm<sup>2</sup> (1+).

Glycerol saline: negative.

Histamine 37 mm<sup>2</sup>

Concentrate of *Papaver somniferum* straw: 4 mm<sup>2</sup> (1+);

**Poppy seeds: 12 mm<sup>2</sup> (3+).**

Glycerol saline: negative.

Histamine: 10 mm<sup>2</sup>

### Specific Bronchial Provocation Test:

**Poppy seed extract (1:1.000 w/v): positive.** (Fig 1).

Poppy straw extract: negative (decrease in FEV<sub>1</sub> < 20%).

### Methacoline Test:

Pre specific provocation test: PC<sub>20</sub> = 1.6 mg/mL

Post specific provocation test: PC<sub>20</sub> = **0.6** mg/mL

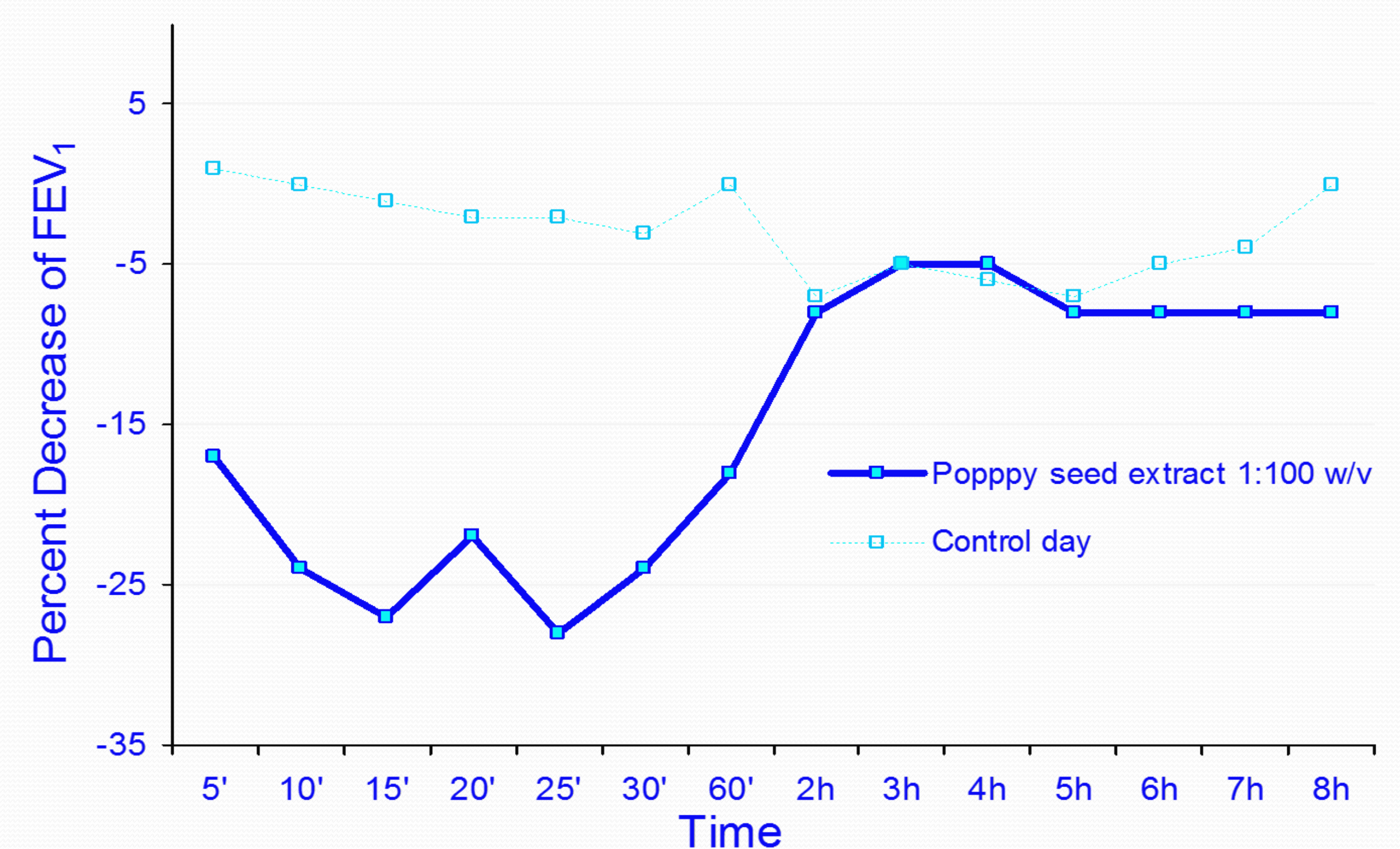
### FE<sub>NO</sub>:

Pre specific provocation test: 18 ppb.

Post specific provocation test: **47** ppb.

### Western Blot (Poppy seeds extract):

Molecular weight bands compatible with allergens described in *Papaver somniferum* (Pap s1 17 kDa y Pap s 34 kDa). (Fig 2).



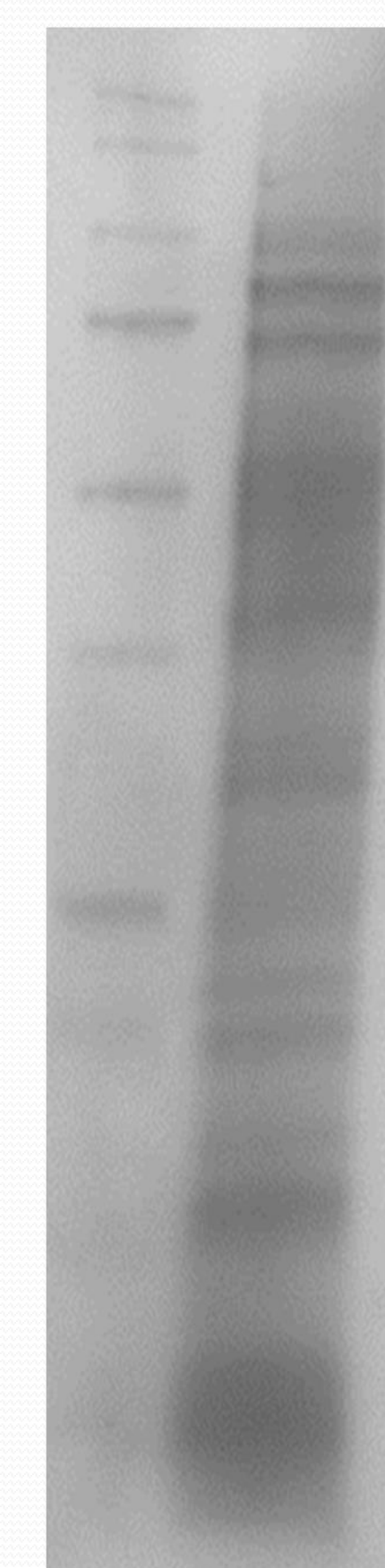
There are 3 allergens described in *Papaver somniferum* seeds:  
•Pap s 17: Homologue Bet v1(17 kDa)  
•Pap s 14: Profilina (14 kDa )  
•Pap s 34 kDa

In the patient Western Blot we found molecular weight bands, compatible with allergens previously described in *Papaver somniferum*.

### SDS-PAGE

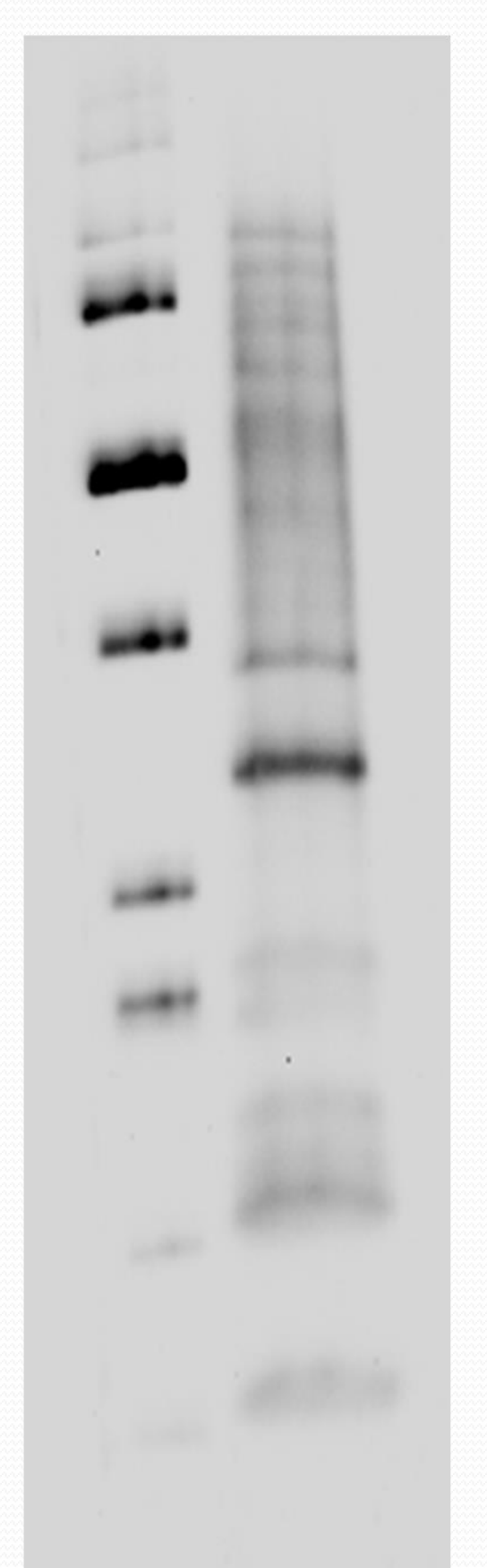
MW 1

250  
150  
100  
75  
50  
37  
25  
20  
15  
10



### IMMUNOBLOTT

MW 1



## CONCLUSION

- We describe a case of IgE-mediated occupational asthma caused by allergy to poppy seed proteins (*Papaver somniferum*).
- We have not found similar cases in literature