



NATURAL
MUTANTS



MICE
Inbred

GENETICALLY
ENGINEERED
MODELS
(GEM)

BP/2 BIOZZI Mouse Spontaneous Asthmatic Model

WILD TYPE

Strain name: BP/2IcRj-BIOZZI

Type: Mutant inbred mouse

Origin: INSERM, Unit 255 (Curie Institute, Paris, France) - 1994

NATURAL
IMMUNO-
DEFICIENT

Colour and related genotype:

Albino mouse - Tyr^c/Tyr^c
MHC: Haplotype H2^a

Breeding: Easy to rear



Presentation of the model

High antibody responder descended from selection done by BIOZZI and COL. The selection for high antibody titer, following a challenge with sheep erythrocytes started in 1968, from outbred SWISS stock. The strain has been bred in a small population for 67 generations.

In mice, 3 loci that influence asthma traits have been identified: the Asthm1 locus (chromosome 9), the Asthm2 locus (chromosome 11) and a locus on chromosome 17 near Bhr3 (Zhang et al., 1999).

In the BP/2 model, an immunization and subsequent challenge with ovalbumin results in asthma symptoms, similar to the ones seen in human allergic asthma: airway inflammation, eosinophil infiltration and non-specific bronchial responsiveness. The locus associated with this respiratory system response is Asthm2. The strain has a high IgE titre and expresses bronchopulmonary hyper-responsiveness (BHR) after an antigenic challenge. BHR is accompanied by airway sequestration of lymphocytes and eosinophils, and by IgE-bearing granulocytes / basophils. After antigen administration, BP2 mice respond with an anaphylactic shock characterized by an intense serotonin-dependent bronchoconstriction, with probable mast cell activation. Immunised and multi-challenged BP2 mice become hyperresponsive to bronchoconstrictor agents, including serotonin, acetylcholine or methacholine. This hyperreactivity lasts several days and probably has an inflammatory etiology because it is suppressed by dexamethasone. Dex also prevents eosinophilia of the airways and production of broncho-alveolar liquid. The airways of BP/2 mice do not respond to exogenous nor endogenous histamine. Isolated airways of BP2 mice contract upon exposure to antigen, to serotonin and cholinergic agents, which correlates *in vivo* and *in vitro* results.

Protective effects of drugs can be targeted insofar as cytokine concentration in the blood, peritoneum and bronchoalveolar fluid can be known after allergenic challenge. Interleukine 5 and TNF- α releases have notably been demonstrated.

Reproductive data*	
Bigamous mating	
Litter size at birth	8.68
Weaning %	95
Productivity index	0.97
Sterility %	3
Gestation time	Between 18 and 20 days

* JANVIER LABS 2010 Data, for an indicative basis



Our added value

- The «JANVIER LABS Genetic Policy», specific programme, guarantees homozygosity of autosomal pairs
- Animals with the SPF or SOPF standards
- A gentling policy for docile and easy-to-handle animals
- Optimal stability conditions of our models during shipments, thanks to our dedicated and internal transport service
- A scientific support with a team of Veterinarians and PhD



Main application and research fields

EXPERIMENTAL ALLERGY ASTHMA

ANTIBODIES PRODUCTION

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