

Statement

From the Working Group on Hygiene

SPF, SOPF – what does it mean?

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“SPF” is the abbreviation for the term “specific (or specified) pathogen-free”. It is used to describe the state when animals are free of certain individually listed (i.e. specified) bacteria, viruses, parasites and/or fungi. The microbiota of SPF animals is not entirely known, as is often assumed. **SPF just specifies which agents have not been detected in a given population by the methods used.** These negative findings as well as the agents that have been detected are declared on a health monitoring report for SPF animals.

For example, if mites have not been detected in an animal population these animals can be called “specific pathogen-free” although tests for bacterial, viral and other parasitic agents have not been performed. **The microbiota is not necessarily identical among SPF animals and the exclusive use of the term “SPF” does not define their microbiological quality,** i.e. an SPF animal is not automatically an animal of good microbiological quality or “clean” animal, as is often wrongly assumed. **Similarly, the term “SPF” does not make a statement on the quality of housing conditions (barrier, open cages, IVC etc.).**

An approach to define and standardize the microbiological status of laboratory animals has been made by FELASA¹. This organization has published recommendations for the health monitoring of laboratory animals including lists of the infectious agents to be monitored in different animal species. However, these lists do not represent strict requirements. The commonly used phrase “in accordance with FELASA recommendations” does not describe the microbiological status of an animal unit but refers to the health monitoring programme, which, in this case, is performed in compliance with FELASA recommendations. The extent to which the health monitoring programme applied is in accordance with FELASA recommendations should always be verified because the recommendations are often only partially implemented.

In conclusion: The term “SPF” does not represent a uniform microbiological standard but is individually defined. It exclusively refers to animals (not housing conditions). The use of the term “SPF” for an animal population requires that the absence of defined agents and corresponding

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antibodies is proven by regular monitoring of a sufficiently large number of animals (sample) at appropriate ages by suitable methods¹. This information including the health status of a population – apart from further details – should be included in a comprehensive health report.

“SOPF” and other none-defined terminologies: “SOPF” represents an abbreviation for the term “specific and opportunistic pathogen-free”. “SOPF” emphasizes that the animal colony is additionally free of certain “opportunistic” pathogens (usually bacteria such as *Klebsiella* spp., *Proteus* spp., *Pseudomonas aeruginosa* or *Staphylococcus aureus*). In principle, the term “SOPF” is redundant because the term “SPF” already includes this specification. The term “SOPF” is used by certain commercial breeders to refer to different quality standards (particularly with the characterisation of immune-incompetent animals in strict barrier areas (e.g. isolators). With the purchase of “SOPF” animals, as it is the case with all animal purchases, a comprehensive health report should always be provided, which includes information about all agents tested and the test results for the respective microbiological unit. Furthermore, other designations such as “barrier reared”, “virus antibody free” (VAF), “clean conventional”, “pathogen-free” or “murine pathogen-free” (MPF), “optimal hygienic conditions” (OHC), “health monitored” are only describing terms that do not provide information about the health status of animals.

¹Mähler et al. 2014. FELASA recommendations for the health monitoring of mouse, rat, hamster, guinea pig and rabbit colonies in breeding and experimental units. *Lab. Anim.* 48:178-192.