



Biological Resource Centers  
for Domestic Animals

### 3rd International Seminar of CRB-Anim Infrastructure

Domestic Animals, Biobanks and Biodiversity

November 26th, 2019

## Importance of the Cani-DNA BRC (canine samples for biomedical research) : example of a collaboration to develop a comprehensive Axiom Canine High Density Array, 712 000 SNP

Marie-Laure Schneider Thermo Fisher

Biological Resource Centers (BRC) such as the CANI-DNA BRC, part of CRB-Anim a more global BRC for domesticated animals, with their variety of biological samples are key players in the scientific and stakeholders' communities. Here we illustrate the importance of such players with the development of a genomic tool, a high-density SNP canine microarray which was developed by Affymetrix (now ThermoFisher) in collaboration with the canine community Key Opinion Leaders. The Cani-DNA BRC provided 384 samples and CRB-Anim funded genotyping for 192 of them, in order to enlarge the panel of breeds used to validate the chip. The talk covers why and how this tool was developed and how it can be used for genomic analysis.

### Axiom Canine HD Content

**712,893**

Disease & trait specific markers  
186

- Power of multiplex screening
- Curated content from publications
- Breed distribution of well studied mutations
- Traits such as coat color

Parentage markers (Agrisec)  
565

- Parentage
- Cross-platform comparisons

Backbone +  
Illumina 170K markers  
712,142

- Best performing markers selected from 1.1M screen with 2K samples. [CanFam 3.0](#)—Newer reference genome
- High density—better spacing across chromosomes
- Legacy content for continuation of canine studies
- Validated with samples from across 51 breeds : Ideal for complex disease mapping across and within breeds





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## Importance du CRB Cani-DNA : exemple d'un développement collaboratif d'une puce à ADN Axiom de haute densité 712,000 SNP

Marie-Laure Schneider, Thermo Fisher

Les centres de ressources biologiques (CRB) comme le CRB Cani-DNA, qui fait partie du plus large CRB-Anim, et qui possèdent une grande collection d'échantillons variés de différentes espèces, sont des acteurs importants pour la communauté scientifique et l'avancement de la recherche. Ici nous illustrons l'importance de ces acteurs avec l'exemple du développement par Affymetrix (maintenant ThermoFisher) d'une puce canine à ADN haute densité comme outil de recherche en collaboration avec les KOLs de la communauté canine. Le CRB Cani-DNA a fourni 384 échantillons et CRB-Anim a financé le génotypage de 192 d'entre eux pour étendre le panel de races utilisé pour valider cette puce. La présentation couvrira pourquoi et comment cette puce a été développée ainsi qu'un exemple d'utilisation en génomique.

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