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# ***ECHINOCOCCUS MULTIOCCULARIS* GENOTYPING BY THE MICROSATELLITE EMSB, STATE OF THE ART**

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## **Introduction**

*Echinococcus multilocularis* is a common tapeworm in foxes and rodents in the northern hemisphere and the agent of Alveolar Echinococcosis (AE). Epidemiological discontinuities are known, highly endemic in China, in expansion in Europe and rarely in North America. In this context, genetic analyses were performed to identify the parasite circulation amongst hosts in the environment at different spatial scales. A highly discriminant molecular marker was thus designed.

## **Materials and Methods**

From the first description to the assessment of its discrimination power amongst isolates from different geographical scales, 10 years of research have been performed on *E. multilocularis* and are summarized here.

## **Results**

The microsatellite EmsB was recently confirmed as a tandemly repeated sequence of about 250bp present in about 40 copies in the parasite genome. Its original profile hinted high power of discrimination. First, regional *E. multilocularis* profiles were described by the analysis of EmsB in Europe, America and Asia. In Europe, the marker has permitted to distinguish a historical area and newly endemic areas. Moreover an Arctic origin was described for the parasite recently described in Svalbard. In order to better understand its transmission pathway to human, a genotyping project on European AE has been started. From the first results, a contamination in the close environment of the patient was suspected.

## **Conclusion**

For future researches, an international EmsB database will be implemented in the EWET project (“EmsB Website for Echinococcus Typing”) to permit to researchers and physicians to better understand the source of contamination for humans and animals and achieved a targeted struggle against the parasite.