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A novel non-invasive tool for disease surveillance of large free-ranging whales and its relevance to conservation programs

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The numbers of potentially pathogenic microorganisms that have been isolated from stranded cetaceans in the last three decades underscore the urgent need for methods of detection of microorganisms that might cause significant disease and increase the likelihood of population declines. We have designed and implemented two non-invasive techniques for the collection of exhaled breath condensate (blow) from free-ranging whales and demonstrated their suitability for the detection of respiratory bacteria. We successfully collected 22 individual blow samples from eight cetacean species. Using well-established molecular techniques we detected three bacterial genera (*Haemophilus, Streptococcus* and *Staphylococcus*). *Haemophilus* spp. was detected in fin whale *Balaenoptera physalus*, sperm whale *Physeter macrocephalus*, humpback whale *Megaptera novaeangliae* and gray whale *Eschrichtius robustus* blows, while unidentified

Palabras clave: antibacteriana, Cetaceans, exhaled breath condensate, non-invasive sampling, pathogen surveillance, respiratory bacteria