IN BRIEF

TECHNIQUES AND APPLICATIONS

An impure "pure culture"

In a previous study, a culture of the electrical-current-producing bacterium *Geobacter sulfurreducans* str. DL1 was evolved to select an isolate with an ability to produce more current. However, the isolate (termed KN400) was shown to contain more than 27,000 SNPs and 139 unique ORFs, indicating that it could not possibly have evolved from *G. sulfurreducans* str. DL1. It was therefore assumed to be an external contaminant that was inadvertently introduced during the experiment. By sequencing a gene that differed by 14 bp between the DL1 and KN400 strains, Shrestha *et al.* now show that the KN400 strain was in fact present in very low abundance in the initial *G. sulfurreducans* str. DL1 culture, despite the DL1 strain having undergone the standard approach of serial dilution and repeated re-streaking of isolated colonies on solid agar to ensure its purity. Furthermore, previous deep sequencing of the purified DL1 strain to 80-fold coverage failed to detect KN400-specific sequences. These data emphasize the ability of extremely rare variants to go undetected by deep sequencing and the inadequacy of the repeated-streaking approach to obtain a pure culture. The authors propose that to avoid undetectable contamination, cultivation from a single cell is required, which could prove technically challenging for many environmental microorganisms.

ORIGINAL RESEARCH PAPER Shrestha P. M. *et al.* When is a microbial culture "pure"? Persistent cryptic contaminant escapes detection even with deep genome sequencing. *mBio* **4**, e00591-12 (2013)

VIRAL THERAPEUTICS

Antisense therapy makes sense for HCV

MicroRNA-122 (miR-122) is abundant in the liver and binds to two sites in the 5′ UTR of the hepatitis C virus (HCV) genome, thereby protecting it from degradation and from the host immune response. Miravirsen is an antisense inhibitor that binds miR-122 with high affinity and arrests its activity. In this study, the efficacy and safety of miravirsen were evaluated in 36 patients with chronic HCV genotype 1 infection. The results show that the compound induces a dose-dependent reduction in HCV RNA levels that lasts for up to 14 weeks after the conclusion of treatment. Furthermore, no clinically significant adverse effects on renal function were detected, and there was no evidence for the emergence of viral resistance. Because miR-122-binding sites are conserved across all HCV genotypes and subtypes, targeting this host miRNA represents a promising strategy for anti-HCV therapy.

ORIGINAL RESEARCH PAPER Janssen, H. L. A. *et al.* Treatment of HCV infection by targeting microRNA. *N. Eng. J. Med.* 27 Mar 2013 (doi:10.1056/NEJMoa1209026)