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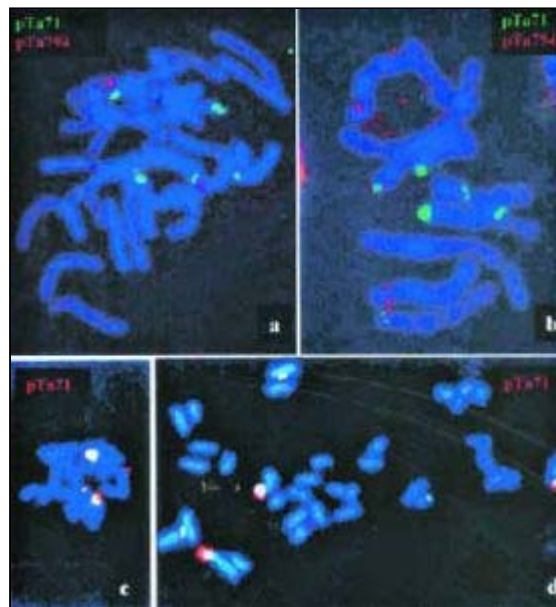
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WORLD OF SCIENCE

Barcoding sure to help

DR. T. V. PADMA

Can all species be identified using the COI DNA barcode?



The scientific community is debating whether DNA barcoding will, indeed, live up to the promise it seems to show now. Let's look at some possible limitations of the technique.

Species that have diverged (split apart) recently may not look different enough genetically for this technique to tell them apart. While the COI gene sequence may be enough for most animals, plants probably won't show enough diversity in this region of their DNA. So to tell plant species apart using this technique might be much harder. Scientists are already trying to see whether the technique will work and how it needs to be modified to include plants, if possible. Fungi, protists and many microbial species may not be easily identified by DNA barcoding either, some scientists think.

Tall claims

Some scientists feel that the strengths of barcoding have been exaggerated and that many of the claims are too tall to ever come true. Centring on just one gene is also not necessarily the best thing. Some scientists feel that this is a myopic approach, which may overlook or be blind to other discontinuities and biological connections. Geographic variations within species may not be properly captured by DNA barcoding, say some scientists.

Molecular biology is advancing at such a rapid rate that it is impossible to be certain what methods will be used to identify species a decade from now. But whatever happens, it seems reasonable to expect that molecular genetic techniques such as barcoding will complement, supplement and strengthen traditional taxonomic approaches in the years to come.

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