Leucine zipper motif extends

SIR—Landschulz *et al.*[1] have recently proposed that the 'leucine zipper' is characteristic of a new category of DNA-binding proteins. In this hypothetical structure the side-chains extending from an heptadic repeat of leucine residues over a distance covering (at least) eight turns of an α-helix, interdigitate with those on a similar helix of a second polypeptide, thus facilitating dimerization. The Fos and Jun transforming proteins both contain such a motif and Landschultz *et al.* speculate that it plays a role in the heterotypic complex these proteins can form[1].

We report the presence of the same motif in proteins that are not DNA-binding. As shown in the figure, the fusion (F) glycoproteins of paramyxoviruses each have a leucine-zipper motif, which is in an α-helical structure situated 4–11

Virus	*	*	*	*	Ref.
MV	NLGNAIAKLEDAKELLESSDQILR				7
RPV	NLWNAVTKLEKAKDLLDSSDLILR				8
CDV	NLGNALKKLDDAKVLIDSSNQILE				9
HPV 1	NLASATNFLQQSKIQLMKAKAIIS				10
HPV 3	ELNKAKSDLEESKEWIRRSNQKLD				11
Sendai	NLADATNFLQDSKAELEKARKILS				12
Mumps	ELSKVNASLQNAVKYIKESNHQLQ				13
SV 5	NLAAVNKSLSDALQHLAQSDTYLS				14
NDV	ELGNVNNSISNALDKLEESNSKLD				15

Comparison of leucine-zipper motif in F proteins of different paramyxoviruses. Leucine heptad repeats are marked by asterisks. Viruses: MV, measles; RPV, rinderpest; CDV, canine distemper; HPV 1, human parainfluenza 1; HPV 3, human parainfluenza 3; SV 5, simian 5; NDV, Newcastle disease.

amino acids from the transmembrane area. In some cases, isoleucine is substituted for one of the leucines, but Kouzarides and Ziff[3] have shown that this does not affect the interaction of Fos and Jun. Further analysis of the proposed structure reveals that at position 4 alongside the leucine, there is always a small uncharged amino acid, whereas charged amino acids are distributed in the other five positions.

Studies with influenza haemagglutinin[4] and the glycoprotein of vesicular stomatitis virus[5] have shown that after their synthesis in the endoplasmic reticulum, these glycoproteins must oligomerize in order to be transported to the cell surface via the Golgi complex. Conceivably, the same is true for the F glycoproteins of paramyxoviruses, in which case dimer and tetramer formation may be mediated by the leucine zippers. The F glycoprotein of Sendai virus is a tetramer when isolated under non-denaturing conditions[6].

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Stereo problem

SIR—I have frequently suffered frustration because of the reversed depth and handedness of stereo-images when viewed directly from the printed page, especially when other clues such as the size of components or their shading are adjusted to give parallel depth information. Like most people, I view such images with crossed visual axes. The diagram in Vance Tucker's letter (*Nature* **337**, 605; 1989) suggests a simple solution.

If one member of a stereo-pair were to be flanked on either side by identical copies of the other stereo-pair, as in Tucker's diagram, then a reader could see the correct depth and handedness by looking at, say, the left pair with uncrossed visual axes and at the right pair with crossed axes. The same procedure could also be used with projected images from slides, films or overhead projectors, although given that many individuals who view close stereo-pairs with uncrossed axes view distant pairs by the crossed method, it would probably suffice to project only the 'crossed' arrangement. Unfortunately, in my experience it is more usual for the uncrossed images to be projected or printed (for example, the stereo-pairs on pages 618 and 619 of the same issue of *Nature*), causing confusion to most direct viewers.

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Stop taxonomists

SIR—Replying to complaints[1] about the number of changes in biological nomenclature, Hawksworth suggests[2] that "international peer reactions are the most likely prospect for restricting unwelcome changes...". Unfortunately, this restriction seems unlikely to happen if the peers are fellow taxonomists.

One difficulty stems from some of the general assumptions of taxonomists: even Hawksworth's distinguished predecessor, G.C. Ainsworth, held that more is better. He wrote[3]: "the very welcome upward trend in the proportion of new combinations indicates that increasing attention is being paid to revision".

Biologists need good taxonomy, with each name unambiguous and reasonably constant. However, in their enthusiasm, taxonomists make frequent changes and revisions of these changes that cause confusion to other biologists who use the names. This is nothing new; it has been going on for years and it is time it stopped.

This conflict of interest between taxonomists, who want to change the names of organisms, and other biologists, who do not, could be resolved. Taxonomists could continue publishing their findings, as now, but international standing commissions could review these publications every few years and issue lists of official names. These names would hold until the next list was issued, so that names would be standardized over periods of several years.

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Carbonatite origin and diversity

SIR—A recent paper[1] and an accompanying News and Views article[2] explained the origin and diversity of carbonatites by production of primary carbonatite magma in the mantle, followed by fractional crystallization. Gittins[2] considers the experimentally produced carbonatite melt of ref. 1 to be particularly relevant to the problems of carbonatite magma genesis because it contains the oxides required to crystallize the silicate, phosphate and oxide minerals that are commonly associated with the carbonate minerals that form the majority[3] of carbonatite rocks.

In contrast, Gittins[2] asserts that the carbonate liquids produced by immiscibility in our experimental studies[4,5] are too poor in non-carbonate components to be considered relevant to natural systems. Twyman and Gittins[6] previously postulated a mildly alkalic olivine sövite as a suitable parent magma; the proposed composition of this magma is listed in the table, together with the carbonatite melt composition of ref. 1 and immiscible silicate/carbonate liquid pairs from refs 4 and 5 and our new work (in preparation).

Contrary to Gittins' statement, some of the carbonate liquids produced experimentally in ref. 4 contained significant amounts of non-carbonate components. Although the FeO and MgO contents of these carbonate liquids are quite low, this simply reflects the fact that the starting bulk composition was very poor in these