from several minutes to a few hours, and the procedures used by the authors[2] maintained DCs out of their microenvironment for several hours before the molecular studies. Second, a majority (36–58%) of all cells in LCH lesions are DCs, all expressing CD1a, but a minority (≤25% of DCs) show Birbeck granules and therefore express CD207 (ref. 7). Notably, Allen and McClain[2] studied all of the cells in only 2 of the 14 lesions examined; they directly focused on $CD207^+$ LCs in the 12 other biopsies, thus providing only a partial analysis of the $CD1a^+$ DCs of the lesions. Moreover, 12 of the 14 lesions that they studied[2] were bone lesions, in which we showed that most of the IL-17A–expressing DCs are $CD1a^+CD207^-$ cells[1]. Finally, the molecule recognized by antibodies to IL-17A in our study may express functional IL-17A epitopes, although it originates from a sequence different from the canonical IL-17A mRNA sequence.

LCH is a DC-related disease rather than an LC-related disease, as the lesions include not only LCs but also $CD207^-$ DCs of the $CD1a^+$ family, the latter cells being the major IL-17A producers in bone lesions. Numerous IL-17A activities are in line with LCH at the molecular level, including induction or upregulation of macrophage colony–stimulating factor, CD14, CD68, granulocyte-macrophage colony–stimulating factor, C-C motif chemokine ligand-20, receptor activator of nuclear factor-κB ligand, tartrate-resistant acidic phosphatase, cathepsin K, matrix metalloproteinase-9 and matrix metalloproteinase-12, as well as long-term DC survival and DC fusion; furthermore, at the physiological level, granuloma formation, bone resorption, neurodegeneration and soft tissue lesion are phenotypes of other IL-17A–related diseases[8]. Interestingly, IL-17A is also involved in lymphoid organogenesis[9]. In conclusion, a central role for IL-17A activities in LCH pathogenesis seems strongly supported by current knowledge.

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1. Coury, F. *et al. Nat. Med.* **14**, 81–87 (2008).
2. Allen, C.E. & McClain, K.L. *Nat. Med.* **15**, 483–484 (2009).
3. Wright, J.F. *et al. J. Biol. Chem.* **282**, 13447–13455 (2007).
4. Saxne, T., Palladino, M.A. Jr., Heinegard, D., Talal, N. & Wollheim, F.A. *Arthritis Rheum.* **31**, 1041–1045 (1988).
5. Corvetta, A. *et al. Ric. Clin. Lab.* **20**, 275–281 (1990).
6. Geissmann, F. *et al. Blood* **97**, 1241–1248 (2001).
7. Favara, B.E. & Steele, A. *Pediatr. Pathol. Lab. Med.* **17**, 769–787 (1997).
8. Ouyang, W., Kolls, J.K. & Zheng, Y. *Immunity* **28**, 454–467 (2008).
9. Cupedo, T. *et al. Nat. Immunol.* **10**, 66–74 (2009).

One size does fit all

To the Editor:

Your December 2008 editorial[1] on the proposal to revise the animal experiments directive of the EU acknowledges that the use of animals in research has long been a matter of concern to the public, that animal welfare must not take a backseat to economic considerations and that leveling the playing field across the EU is important—but then argues that all of that is trumped by the desire of poorer countries to build up their science base.

This would imply that animal research standards, instead of being ratcheted up to those of the best countries, be allowed to drop to those of the worst—something hardly consistent with promoting animal welfare.

The proposal is defective but not for the reasons you list. It represents an improvement on the current legislation—for example, an ethical evaluation by a national authority will now be required—but it would still allow severe suffering. Under this directive, animals can still be used for research into weapons, tobacco, alcohol and household products, to test psychology theories, and to test just about anything else one cares to mention, as opposed to strictly medical research. Additionally, the antiduplication provisions are inadequate, as are those on transparency, and there is no strategy to coax research toward the use of nonanimal alternatives, which everyone says he or she wants to see.

Determining the benefit of a piece of research represents an important part of the scientific and ethical process that should precede any form of experimentation on sentient beings. I would argue that, in a world that uses approximately 115 million animals in research every year[2], this process is not conducted nearly as rigorously as it should be, even by those countries such as the UK and Germany that already require an evaluation.

I would hope that the medical research community would see the revision of the directive 86/609/EEC as a golden opportunity to showcase to the rest of the world how to do humane science rather than an economic or bureaucratic hurdle to be avoided. After all, whether a rabbit is being used in Bulgaria or the UK, its capacity to suffer is just the same.

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1. Anonymous. *Nat. Med.* **14**, 1291 (2008).
2. Taylor, K., Gordon, N., Langley, G. & Higgins, W. *Altern. Lab. Anim.* **36**, 327–342 (2008).