

**Figure 1** - Gel electrophoresis of mixtures of food dyes supplied by FastColours. Lanes numbered left to right [8].

## References

- [1] Curriculum for Excellence: Sciences - Experiences and outcomes – available at [http://www.ltscotland.org.uk/learningteachingand assessment/curriculumareas/sciences/eandos/index.asp](http://www.ltscotland.org.uk/learningteachingand%20assessment/curriculumareas/sciences/eandos/index.asp) (accessed September 12th 2011).
- [2] The Science 3-18 website is available at [www.science3-18.org](http://www.science3-18.org). Please note that to access all resources on the website you need to register and be provided with a log-on ID and password.
- [3] The Wonderful Wizardry of Finding a Gene, SSERC Bulletin (2007) **221**, 2-4.
- [4] The Wonderful Wizardry of Finding a Gene – Battery Free Method, SSERC Bulletin (2007) **222**, 11.
- [5] The National Centre for Biotechnology Education price list is available at [www.ncbe.reading.ac.uk/NCBE/MATERIALS/PDF/NCBEpricelist.pdf](http://www.ncbe.reading.ac.uk/NCBE/MATERIALS/PDF/NCBEpricelist.pdf) (accessed September 12th 2011).
- [6] A variety of food colours are available from the Dr. Oetker Online Shop at [http://www.oetkeronline.co.uk/categories/ Colours-%26-Flavours/](http://www.oetkeronline.co.uk/categories/Colours-%26-Flavours/) (accessed September 18th 2011).
- [7] Information about the ingredients in the Dr Oetker Natural Yellow and Natural Black Food Colours was obtained at [www.tesco.com/groceries/Product/Details/?id=256459508](http://www.tesco.com/groceries/Product/Details/?id=256459508) and [www.tesco.com/groceries/Product/Details/?id=258153734](http://www.tesco.com/groceries/Product/Details/?id=258153734) respectively (accessed September 18th 2011).
- [8] FastColours (2011), Food dyes and Lakes – available at [http://www.fastcolours.co.uk /food-dyes—lakes-9-c.asp](http://www.fastcolours.co.uk/food-dyes—lakes-9-c.asp) (accessed 18th September 2011).

*Lane 1 – mixture of Quinoline yellow and Green S*

*Lane 2 – mixture of Brilliant blue, Quinoline yellow and Allura red*

*Lane 3 – mixture of Quinoline yellow, Green S and Carmiosine*

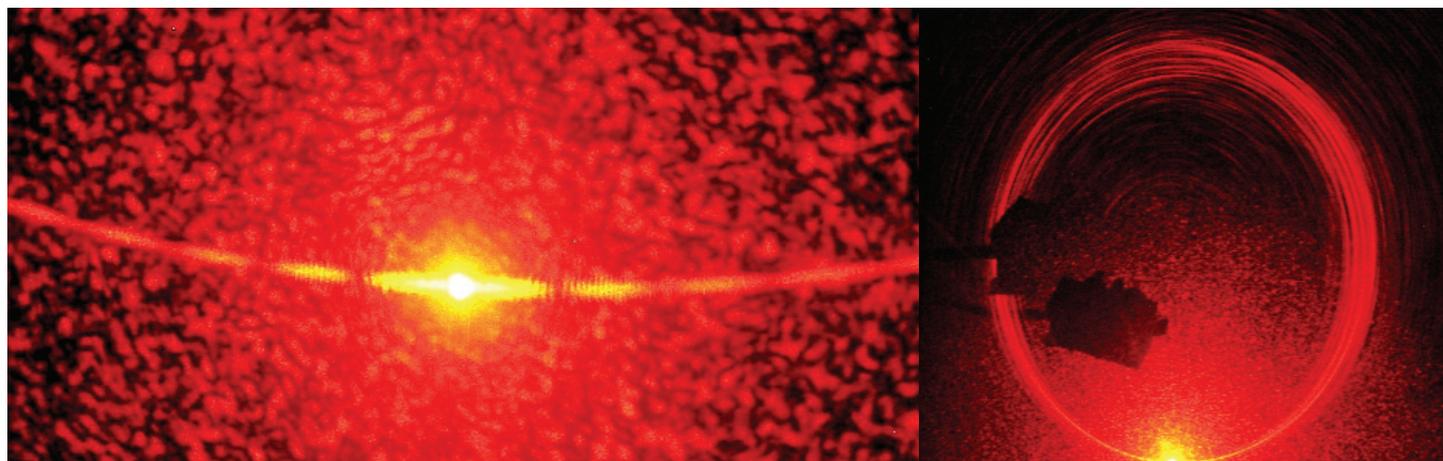
*Lane 4 – mixture of Brilliant blue, Quinoline yellow and Green S.*

## Hair Laser

We pass on details of a rather attractive diffraction experiment – because you're worth it.

A human hair [1] is the ideal diameter to show the diffraction of laser light. Figure 1 shows such a diffraction pattern, with characteristic maxima and minima, but note that it is curved.

The curvature comes about because the hair is not at right angles to the beam. The laser light strikes the hair obliquely, almost running along the strand. Indeed, it is possible to make a complete circle of laser light, as shown in Figure 2.



[1] – We know that some of you are thinking “Where did they get the hair?”.