it affects their optical and mechanical properties, as well as their toxicity. Martin Ploschner and his colleagues at the University of St Andrews, UK, report an efficient way to sort gold nanoparticles by size using laser light.

The team aimed green and red lasers at a thin layer of water containing a mixture of gold nanoparticles 100 and 130 nanometres in diameter. The green light's frequency matched that of the electrons in the smaller nanoparticles. This resonance enhanced forces acting on the particles, pushing them in one direction. The red light interacted with the larger particles, moving them in the opposite direction.

The researchers suggest that the method could sort nanoparticles more finely than current methods, which rely on centrifugation.

Nano Lett. **http://dx.doi.org/10.1021/nl204378r (2012)**

GENETICS

Fewer imprinted genes at re-count

Most mammalian cells have one maternal and one paternal copy of most genes, but some genes carry a molecular signature or 'imprint' that silences one copy. Tomas Babak at Stanford University in California and his team mapped the imprinted genes in mouse brains and found far fewer than recent estimates had suggested.

In 2010, two studies found more than 1,300 imprinted genes in the mouse brain, ten times more than traditional counts. The increase was attributed to improved RNA-sequencing technology. When Babak *et al.* repeated the experiments, they found only 13% of the imprinted genes first identified by the 2010 studies and uncovered statistical weaknesses that resulted in many false-positive signals. Using a different analytical approach, the authors identified roughly 50 new candidate imprinted genes.

Having a catalogue of imprinted genes is important for understanding why imprinting occurs and how it can go awry.

PLoS Genet. **8, e1002600 (2012)**

MOLECULAR IMAGING

Follow the lymph vessels

Lymph vessels grow as wounds heal and cancers spread — a process that can be imaged in living animals, researchers demonstrate in mice.

Lymph vessels often sprout at sites of inflammation, and their growth has been linked to tumour metastasis. Sagrario Ortega at the Spanish National Cancer Research Centre in Madrid and her colleagues genetically engineered a mouse to express a luminescent protein under the control of the gene *Vegfr3*, a lymphatic marker.

The team imaged live mice, tracking vessel growth during embryo development, wound healing and inflammation. They also watched as lymph vessels grew at the edge of melanoma tumours and in lymph nodes infiltrated by the cancer. This vessel growth may aid the spread of cancer to distant organs, the authors say.

Proc. Natl Acad. Sci. USA **http://dx.doi.org/10.1073/pnas.1115542109 (2012)**

MATERIALS

A graphene window on liquids

By using graphene membranes as viewing 'windows', researchers have filmed nanocrystals growing in liquids at atomic resolution.

Studying structures in liquids at the atomic level is challenging because the imaging technique of choice, transmission electron microscopy, requires that samples be in a vacuum to maximize their interactions with the electron beam. Air-tight capsules can be used to enclose liquids, but are thick and made of materials that interfere with passing electrons, resulting in a blurred picture. Membranes made of graphene — atomically thin sheets of carbon atoms — are both impermeable to liquids and much more transparent to electrons.

Paul Alivisatos at the Lawrence Berkeley National Laboratory in Berkeley, California, and his colleagues used these graphene windows to create atomic-resolution movies of platinum nanocrystals clumping together in a liquid.

Science **336, 61–64 (2012)**

ZOOLOGY

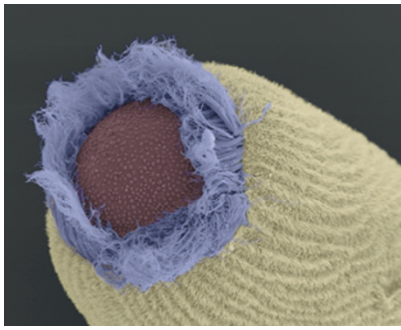
Vision with no nervous system

Sponge larvae can detect light despite lacking a nervous system or the photosensitive 'opsin' proteins found in all other known animal eyes. Instead, another pigment called cryptochrome may underlie the light-sensing ability of the sponge *Amphimedon queenslandica* (**pictured**), report Todd Oakley at the University of California, Santa Barbara, and his colleagues.

Cryptochromes mainly absorb blue light and, in other animals, have been implicated in functions from setting circadian rhythms to sensing magnetic fields. The authors identified two cryptochrome genes in the sponge. One, *Aq-Cry2*, is expressed in the 'ring eyes' of *A. queenslandica* larvae and has an absorbance peak similar to the wavelengths that trigger larval activity.

Because eye evolution in other animals has always involved opsins, the use of cryptochrome represents a separate lineage of eye evolution, the team suggests.

J. Exp. Biol. **215, 1278–1286 (2012)**



S. LEYS

COMMUNITY CHOICE

The most viewed papers in science

CANCER

Small, cancer-resistant mice

HIGHLY READ on www.cell.com in March

Boosting the levels of a tumour-suppressor protein in mice makes them smaller and more metabolically efficient, as well as resistant to cancer.

Pier Paolo Pandolfi at Beth Israel Deaconess Medical Center in Boston, Massachusetts, and his colleagues genetically engineered mice to have additional copies of *Pten*, a gene that is mutated or deleted in many cancers. The mice are smaller than normal because they have fewer cells. When injected with a carcinogen, the animals developed tumours later than controls.

The transgenic mice burn energy at a higher rate. Cells from these mice consume less glucose than normal mouse cells but generate more ATP — the energy molecule created during cellular respiration — indicating a more efficient metabolism.

Increasing levels of the PTEN protein could offer a therapeutic approach to preventing both cancer and obesity.

Cell 149, **49–62 (2012)**

NATURE.COM

For the latest research published by *Nature* visit:
www.nature.com/latestresearch