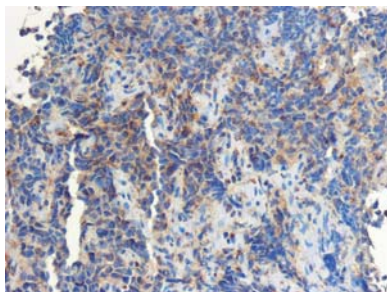
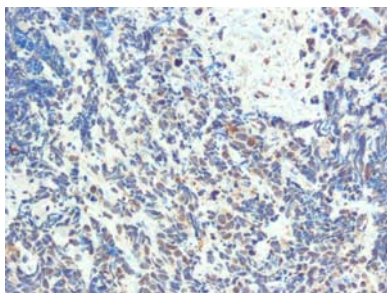


Supp Figure 6

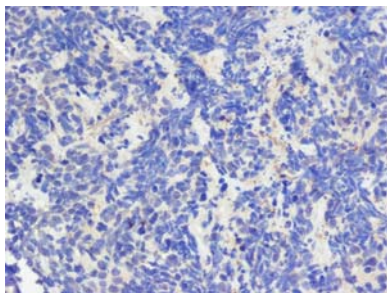
Chemoresistant



**Partially resistant /
Early relapsing**



Chemosensitive



S6K2 staining in human SCLC biopsy material

S6K2 staining / Drug Response	Negative	Positive
Resistant	2 (40%)	3 (60%)
Partially responsive	1 (14%)	6 (86%)
Responsive	9 (90%)	1 (10%)

Supplimentary Figure 6: S6K2 staining correlates with chemoresistance in human SCLC biopsy material. Formalin fixed and paraffin embedded biopsies from 22 patients with SCLC and NSCLC at presentation were sectioned and immunostained using a mouse anti-S6K2 monoclonal antibody (provided by Prof Gout, UCL, London) and Envision detection system (DAKO). Specificity for the target protein was controlled for by using standard protocols including known positive (H510) and negative (Type II pneumocytes) samples, irrelevant antibody and competing S6K2. The pathologist (Dr Neil Sebire, Hammersmith Hospitals) was blinded to the clinical outcome data to avoid reporting bias. The study and on going collection of SCLC and NSCLC biopsy material has been reviewed and approved by our local ethics review board.

Upper Panel: strong S6K2 immunostaining seen in most cancer cells in a biopsy from a patient with chemoresistant tumour (original magnification x 100).

Middle Panel: focal areas of moderate S6K2 staining in a biopsy from a patient with partially chemoresistant disease (original magnification x 100). Our hypothesis would be that these positive cells survived initial chemotherapy and if we had biopsy data on relapse perhaps all the cells would be positive for S6K2.

Lower Panel: absence of S6K2 staining in a biopsy from a patient with chemosensitive disease (original magnification x 100).

These results were seen in 2 of 4 chemoresistant patients, 3/3 partially chemoresistant and 6/6 chemosensitive patients with SCLC. To substantiate these results, we also examined S6K2 staining levels in biopsies from several NSCLC patients. In one patient who was resistant to therapy the tumour was diffusely positive, three of four early relapsing patients, the tumours were focally positive for S6K2 staining whilst three of four chemosensitive tumours were negative. The combined results of staining in both SCLC and NSCLC biopsies are summarised in the adjoining table. Together, these results suggest that S6K2 protein expression levels in biopsies from patients with lung cancer correlates with chemoresistance.