









Extraction:
400m³/j Injection
100m³/j Sources
500m³/j saumure
0,300t sel (Na Cl)
150t/j - 6,25t/h
Grisou Méthane
(CH₄) détecteur









Mine de Saint-Hélène Réseau des galeries

- Vous êtes ici
- Entrée de galerie
- Roc salifre
- Fouages



1. Entrée de la galerie principale
2. Entrée des visiteurs
3. Audio-visuel du Réservoir rond
4. Réservoir Marie-Louise
5. Puits et gare du Bouillet

6. Exploitation de Sainte-Hélène
7. Gare Saint-Pierre
8. Les 70 marches
9. Galerie de base
10. Le Colimaçon

11. Salle R. Burnier
12. Salle à gradins
13. Puits de la Tranchée
14. Le musée - Salle des Cristaux
15. Le lac souterrain

16. Salle des Fêtes - Restaurant
17. Etage du Fondement
18. Etage du Coulat
19. L'Escalier ruiné
20. Le Labyrinthe des sources

21. Le Grand Escalier
22. Puits d'aérage
23. Puits E. Chevalley
24. Salle A. Ruchet
25. Salle du Radium

LE VIGNOBLE DE BEX

La providence a doté le Chablais vaudois des trois symboles irremplaçables des plus antiques civilisations :

le pain - le sel - le vin

que nos ancêtres ont su perpétuer grâce à leur noble et fière tradition.

Situé au Sud du district d'Aigle, jouissant d'une exposition particulière, de conditions climatiques très méridionales et d'un terroir à caractère gypseux, le vignoble de Bex réunit des atouts indéniables pour le vieillissement des crus qu'il produit.

Profitant des dons que lui offre la nature, le Groupement des producteurs-encaveurs de Bex a réalisé ce cellier pour y vieillir ses vins. Ici réunis dans des conditions géologiques exceptionnelles, ils sont à l'abri de la lumière, protégés des vibrations, soumis à une température et une humidité constantes. Ils baignent ainsi leurs caractères très typés grâce à l'atmosphère légèrement saline dans laquelle ils reposent.

Vous trouverez de plus amples informations sur l'appellation de Bex au pavillon d'entrée. Mais offrez-vous le plaisir d'une dégustation car la robe, le bouquet comme le goût de chacun de ces crus suscitent une insatiable envie de les savourer.

DER WEINBERG VON BEX

Die Natur hat dem waadtländischen Chablais drei der unersetzbaren und ältesten Symbole der antiken Zivilisation mitgegeben:

das Brot - das Salz - der Wein

welche durch unsere Vorfahren mit edler und stolzer Tradition gepflegt wurden.

Im Süden des Bezirkes Aigle, erfreut sich der Weinberg von Bex einer speziellen Lage, welche dank südklimatischem Einfluss und dem gipshaltigen Boden ein ideales Ausreifen der hier produzierten Weine möglich macht.

Um die von der Natur geschaffenen Vorteile zu nutzen, haben die Weinbauer von Bex diesen Weinkeller errichtet. Die aussergewöhnlichen geologischen Bedingungen ermöglichen abseits von Licht und Erschütterungen, jedoch bei gleichbleibender Temperatur und salzhaltiger Luftfeuchtigkeit, die Veredelung des Charakters der hier ruhenden Weine.

Weitere detaillierte Informationen über unsere Weine erhalten Sie beim Informationsstand am Eingang der Salzminen. Geniessen Sie eine kleine Weinprobe um das Bukett unserer Weine zu kosten.

THE VINEYARDS OF BEX

Nature has blessed the vineyards of Bex with three of the most valuable assets of ancient civilisation :

bread - salt - wine

Therefore we have inherited from our ancestors these noble and proud traditions.

Due to an excessively sunny situation with southern climatic conditions, added to which the character of the soil is rich in gypsum, the vineyards of Bex have all the elements to produce quality wines for storing.

Taking advantage of Nature's gifts, the Wine Producers of Bex have created this cellar where good wines are stored to maturity in natural geological conditions : darkness, constant temperature and humidity and absolute quietness. Moreover the slightly salty atmosphere adds specific characteristics to the wines.

You will find more information about our wine region in the exhibition hut at the mine entrance. But give yourself the pleasure of tasting our wine, we are sure you'll enjoy it !





1850

La lampe à gaz
à brûleur à jet
à réservoir à gaz
à brûleur à jet

La lampe à gaz
à brûleur à jet
à réservoir à gaz
à brûleur à jet



L'évolution de l'extraction

Die Entwicklung
des Abbaus
L'evoluzione
dell'estrazione
The development
of extraction methods

La découverte du Sel

Die Entdeckung des Salzes
La scoperta del Sale
The discovery of Salt



jusqu'en 1680

La taille de la roche

Das Behauen des Felsens
Il taglio della roccia
Digging the rock



1680 - 1812

Entsalmung vor Ort
Il dissalimento sul posto
On the spot removal of Salt



1813 - 1865

Le novage du gisement

Das Fluten der Bohrschächte
La pulsata del giacimento
Flooding the Salt layer



1867 - 1922

Les forages

Die Bohrung
La perforazione
Drilling



1923 - 1972



HALITE (Sel)



HALITE (Sel)



HALITE (Sel)



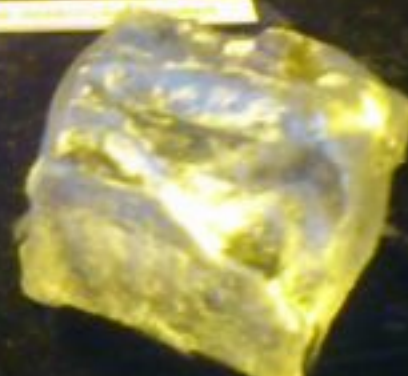
HALITE (Sel) AVEC SABLE
VALLEE DE LA LUNE CHILI



HALITE ROUGE (Sel)
MAROC



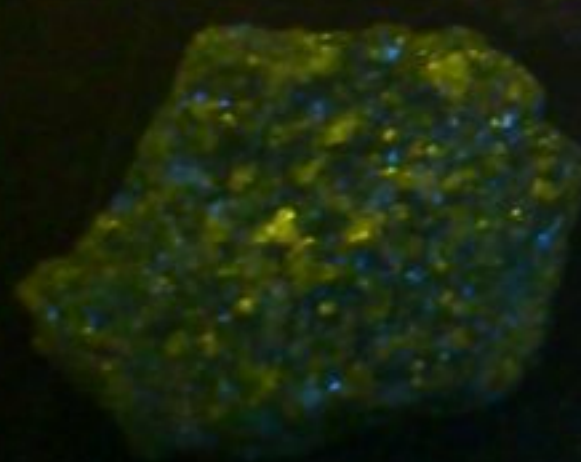
SEL GEMME DE MARIGHA



HALITE (Sel)
ALLEMAGNE



HALITE VERT (Sel) avec SULFATE DE CUIVRE
POLOGNE













EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN



MATHEMATISCH-
NATURWISSENSCHAFTLICHE FAKULTÄT
Institut für Pharmazie



The Ca^{2+} -activated Channels BK and SK4 Control Ca^{2+} in a Type Specific Manner

Annual Summer School

Peter Ruth
Lehrstuhl für Pharmazie

Pharmazie















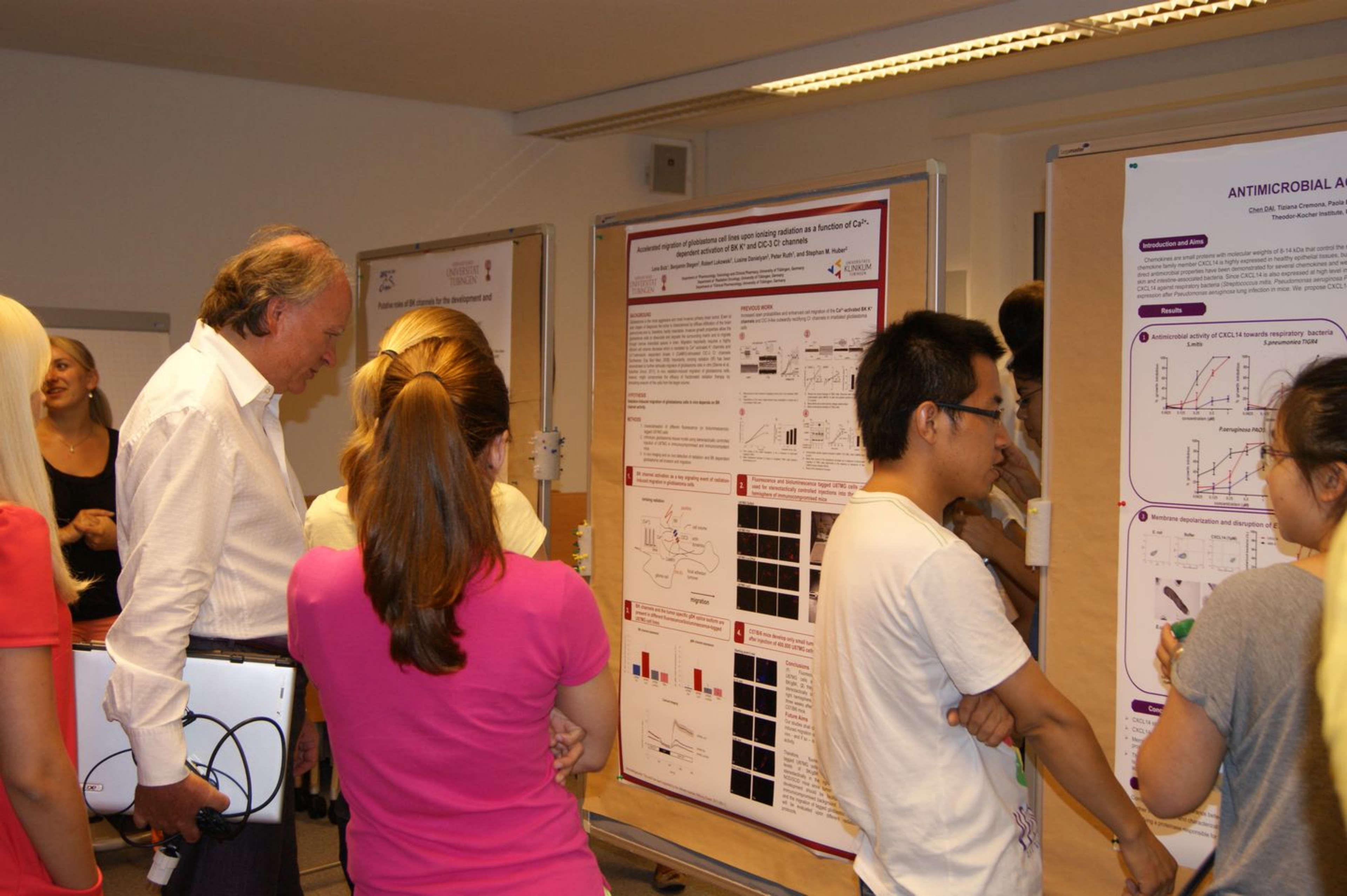




ANTIMICROBIAL ACTIVITY OF CXCL14

required in CD4 T cells to induce IgG production and to maintain follicular helper T cells

FN-NF JUK-CLN



Accelerated migration of glioblastoma cell lines upon ionizing radiation as a function of Ca^{2+} -dependent activation of BK K^+ and $ClC-3$ Cl^- channels

Lara Bött, Benjamin Dörner, Robert Lukowski, Luise Danielyan, Peter Ruth, and Stephan M. Huber¹

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BACKGROUND
Glioblastoma is the most aggressive brain tumor, which carries a poor prognosis. One of the main steps in glioblastoma progression is the invasion of the tumor cells into the surrounding brain tissue. This process is regulated by various factors, including the activation of ion channels. BK channels and $ClC-3$ channels are known to be involved in the regulation of cell migration. We hypothesize that ionizing radiation (IR) accelerates the migration of glioblastoma cells by activating these channels.

HYPOTHESIS
Ionizing radiation accelerates the migration of glioblastoma cells by activating BK channels and $ClC-3$ channels.

METHODS
1. Measurement of cell migration in vitro using a scratch assay.
2. Measurement of cell migration in vivo using a bioluminescence assay.
3. Measurement of intracellular Ca^{2+} levels using a fluorescent indicator.

RESULTS
1. IR significantly increased the migration of glioblastoma cells in vitro.
2. IR significantly increased the migration of glioblastoma cells in vivo.
3. IR significantly increased intracellular Ca^{2+} levels.

CONCLUSIONS
Ionizing radiation accelerates the migration of glioblastoma cells by activating BK channels and $ClC-3$ channels.

ANTIMICROBIAL ACTIVITY OF CXCL14

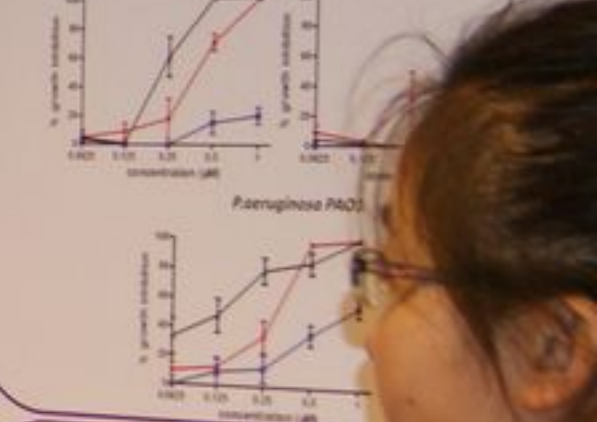
Chen, DAI, Tiziana Cremona, Paola...
Theodor-Kocher Institute, Tübingen

Introduction and Aims

Chemokines are small proteins with molecular weights of 8-14 kDa that control the chemotaxis of leukocytes. CXCL14 is highly expressed in healthy epithelial tissues, but its role in the immune response is still unclear. We aim to investigate the antimicrobial activity of CXCL14 against *S. aureus* and *P. aeruginosa*.

Results

1. Antimicrobial activity of CXCL14 towards respiratory bacteria

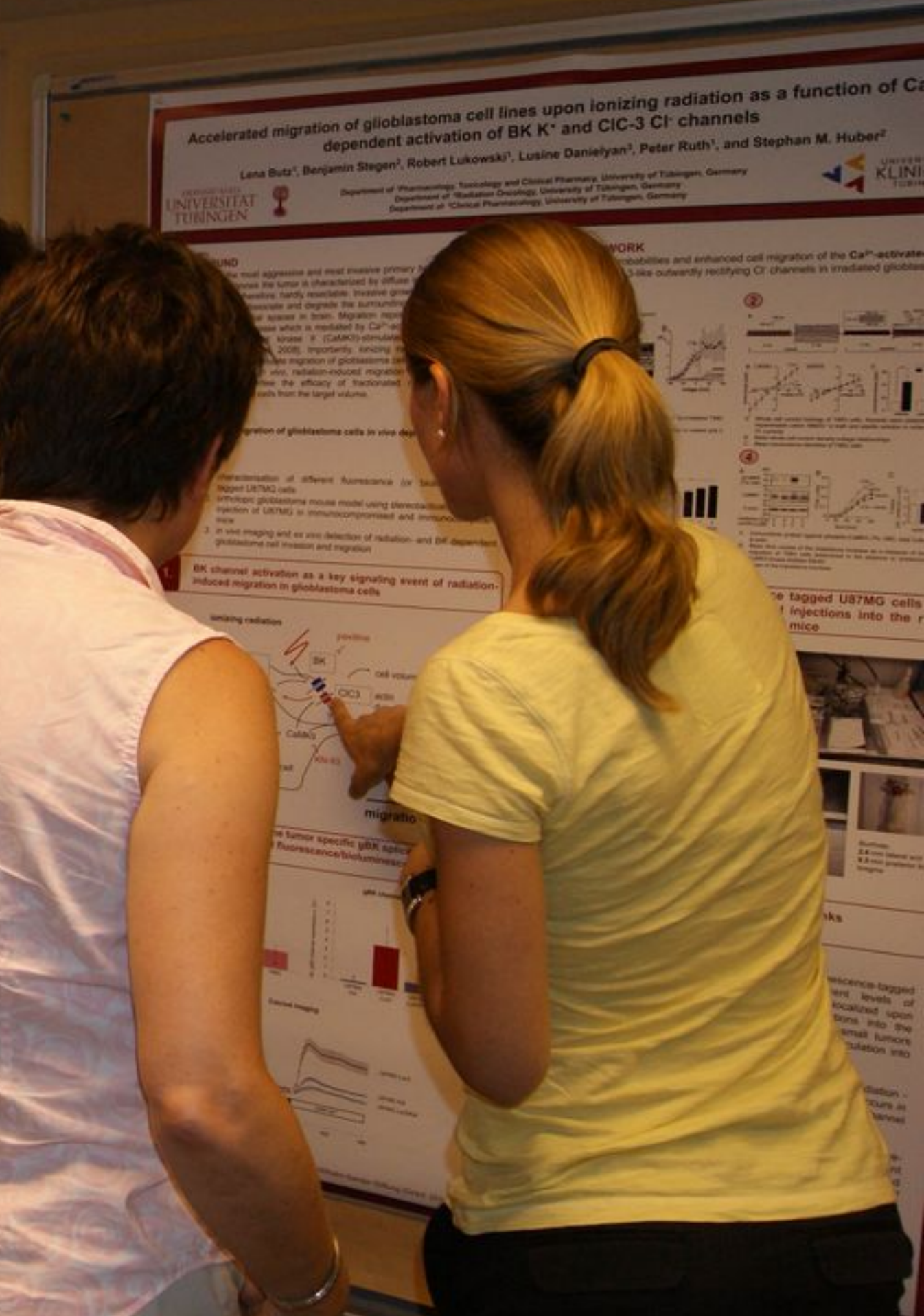
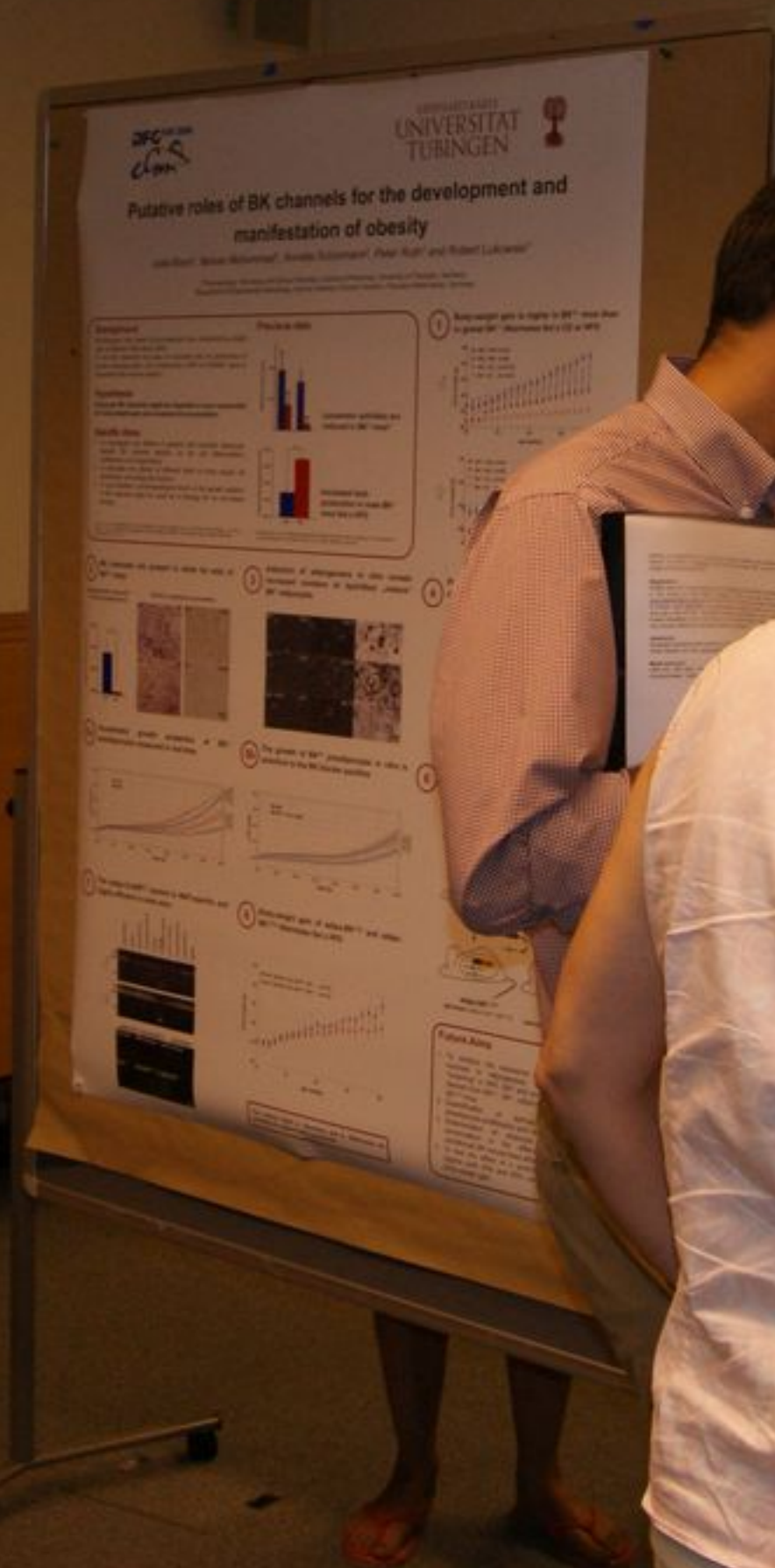


2. Membrane depolarization and disruption of E. coli



Conclusions

CXCL14 exhibits antimicrobial activity against *S. aureus* and *P. aeruginosa*. It also causes membrane depolarization and disruption of *E. coli*. These findings suggest that CXCL14 may play a role in the innate immune response against bacteria.





Soluble factors regulating the migration of myeloid cell subsets into the CNS

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²Center for Experimental Research and Regeneration, University of Cincinnati, Ohio, USA
³GlaxoSmithKline, Research Triangle Park, North Carolina, USA

Introduction:
The CNS is a highly immunoprivileged site. Myeloid cells, including macrophages, monocytes, and dendritic cells, are essential for CNS homeostasis and disease. We have identified soluble factors that regulate the migration of myeloid cells into the CNS.

Results:
We have identified soluble factors that regulate the migration of myeloid cells into the CNS. These factors include chemokines, cytokines, and growth factors. We have shown that these factors can induce the migration of myeloid cells into the CNS in vitro and in vivo.

Conclusion:
Our results suggest that soluble factors play a key role in regulating the migration of myeloid cells into the CNS. This has important implications for understanding the pathogenesis of CNS diseases and for developing new therapies.











*How the brain barriers control
immune cell entry into the CNS*

u^b
UNIVERSITÄT
BERN

*The Duffy antigen/receptor for chemokines
(DARC): A shuttle for inflammatory chemokines
across the inflamed BBB*

Britta Engelhardt
Theodor Kocher Institute
University of Bern
Switzerland



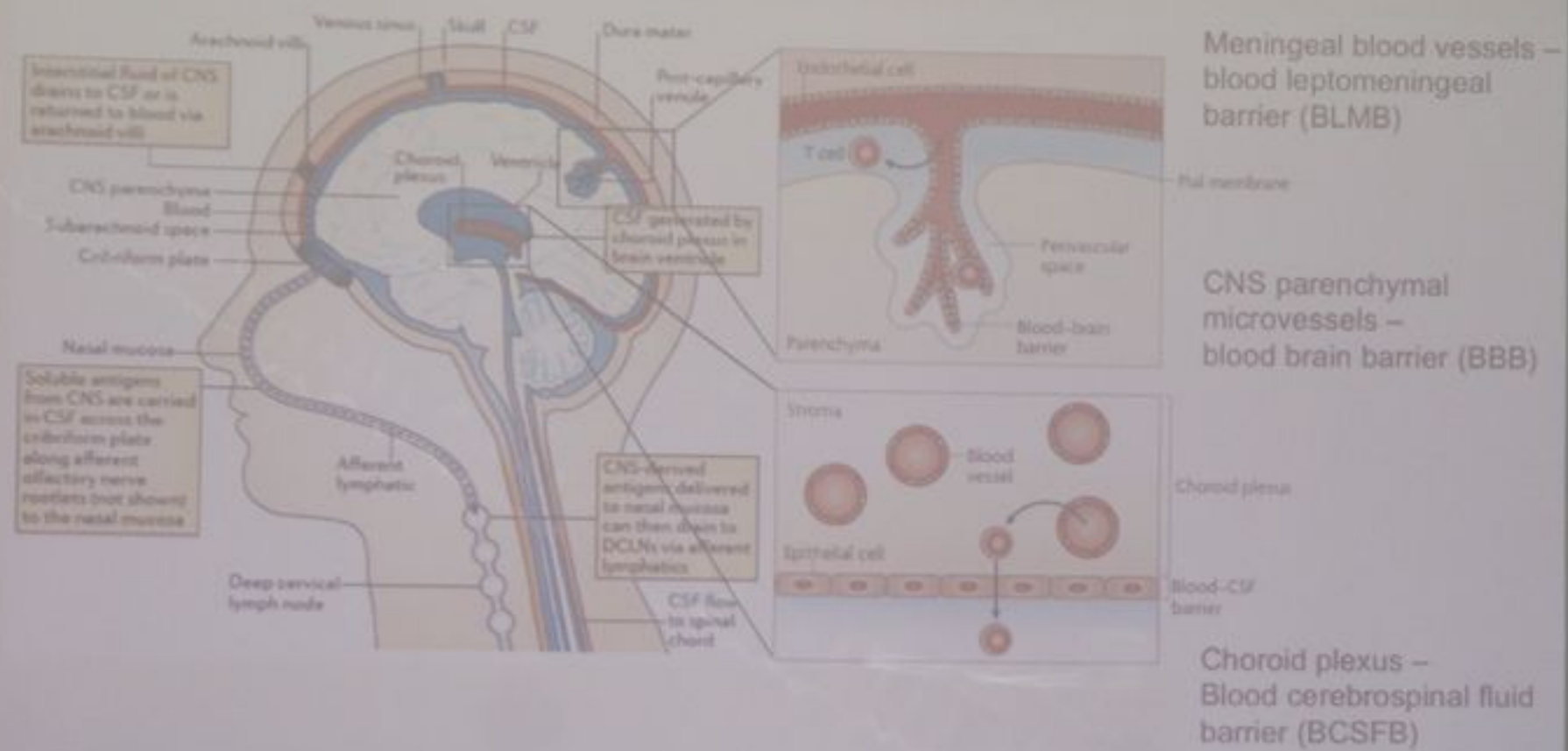
T cell interaction with BBB *in vitro* and *in vivo*

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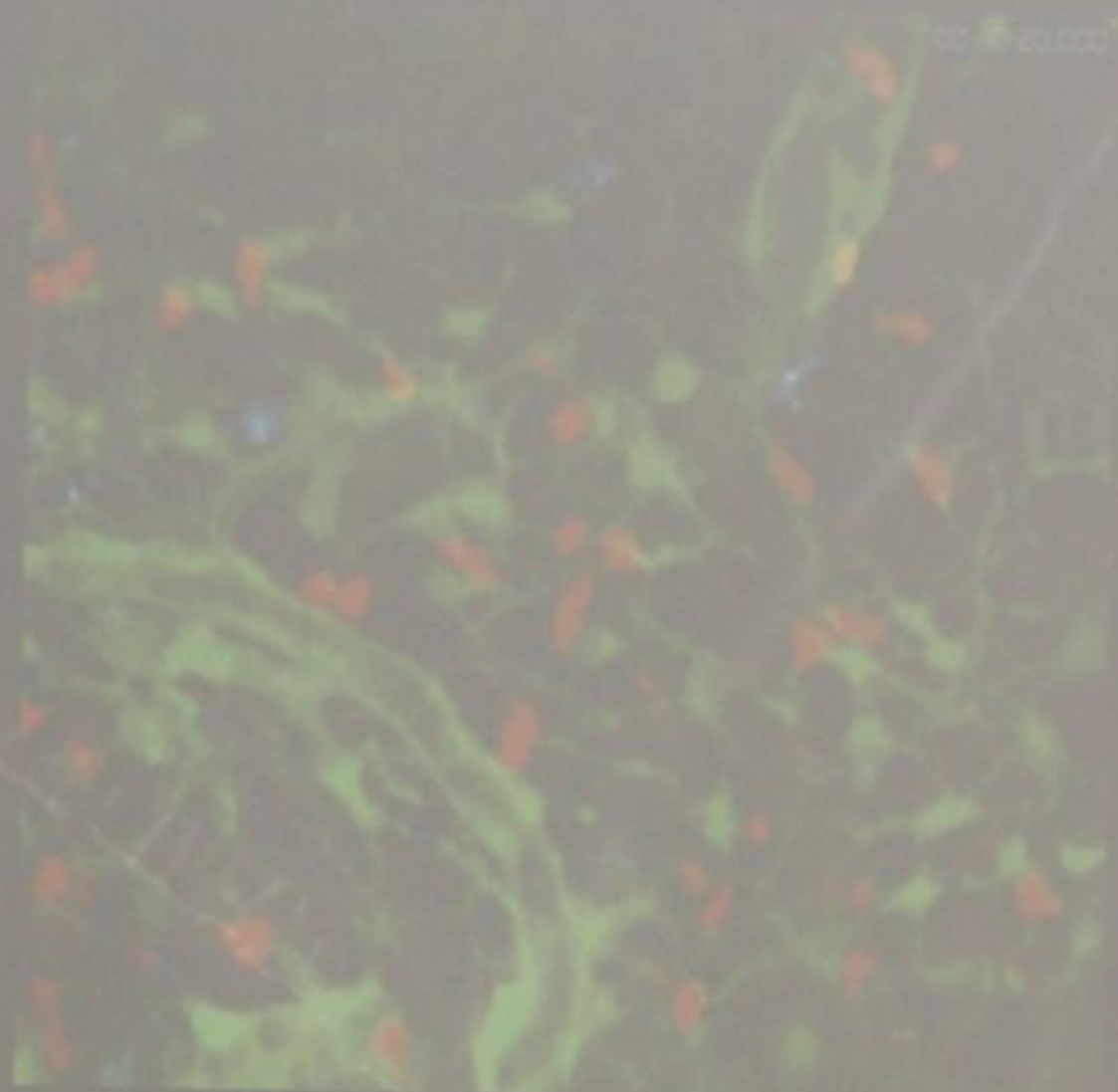
- ❑ *In vivo* data confirm *in vitro* data
- ❑ T cell arrest is mediated by $\alpha 4$ /VCAM-1 and LFA-1/ICAM-1
- ❑ Subsequent polarization needs ICAM-1 and ICAM-2

3 potential CNS entry sites for different T-cell subsets



Ransohoff and Engelhardt, Nature Rev. Immunol. 2012
Goverman, Nature Rev. Immunol. 2009

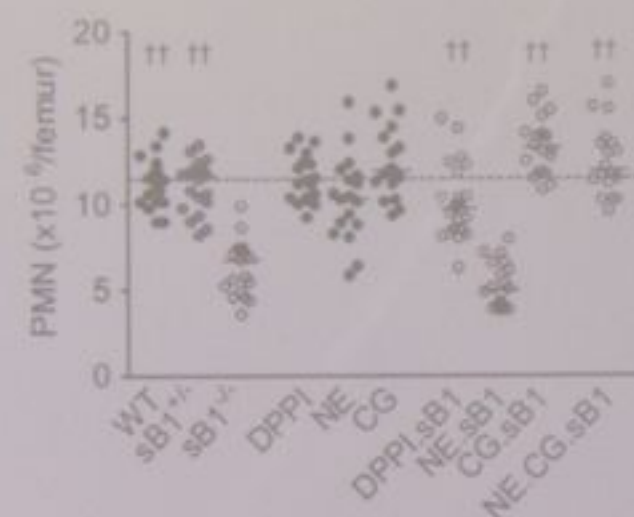
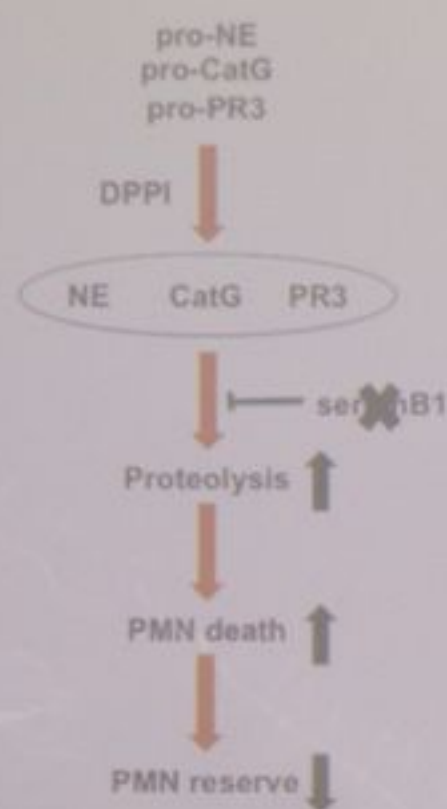
PLN stroma and migrating T cells







Are neutrophil proteases involved in the bone marrow reserve defect?



of cigarette-smoke ure on *Streptococcus* *pneumoniae* clearance

Paola Basilico

PhD student

Theodor Kocher Institute

06.08.2013



12th International Summer School, Jongny, 06-08-2013

Novel IgE Inhibitors Preventing Allergic Inflammation



Alexander Eggel, PhD
Institute of Immunology, University of Bern, Switzerland







