

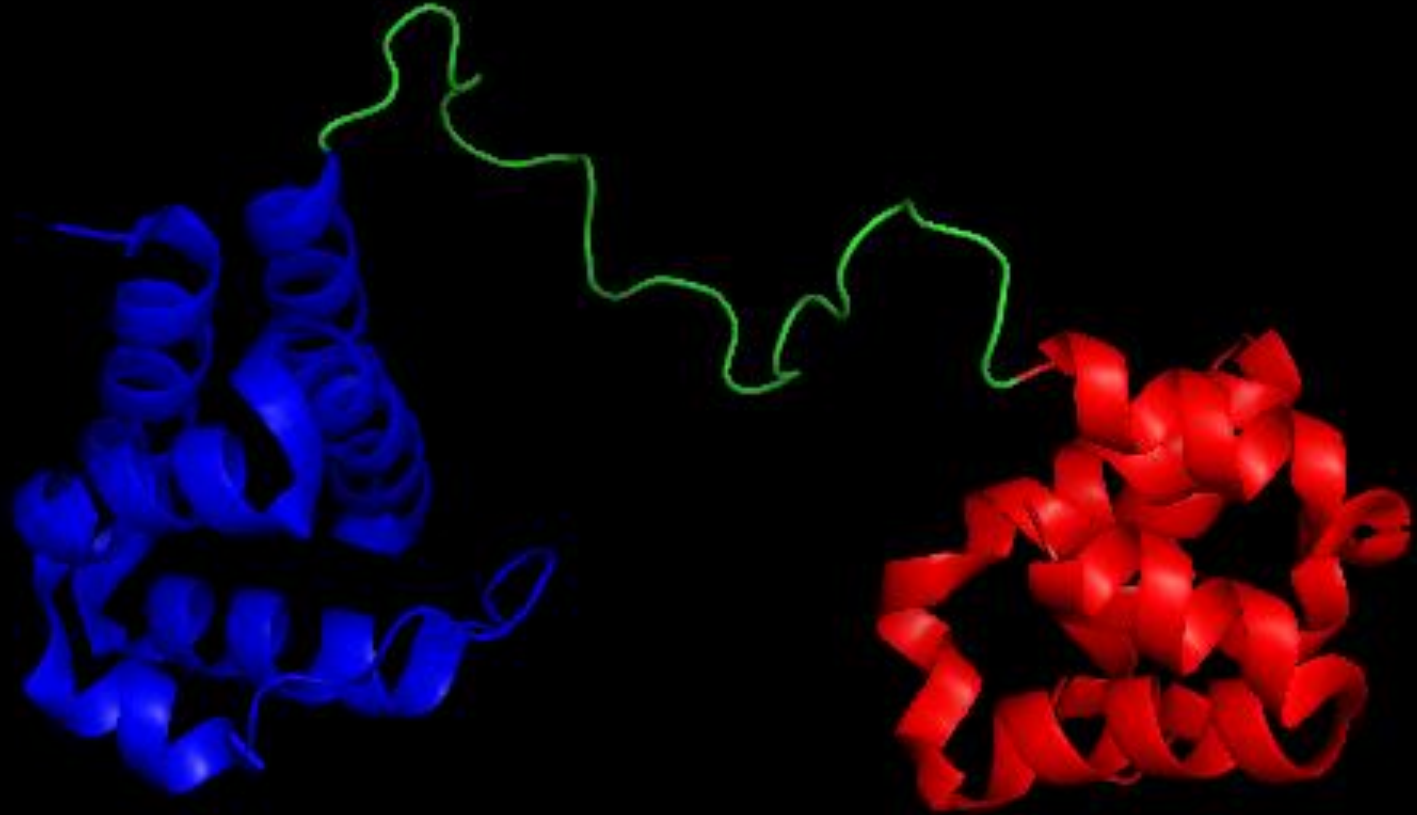
ASC Zerreciklerinden Yeni Nesil COVID 19 Aşı Teknolojisi

**Nesrin Özören, Ph.D.
Boğaziçi Üniversitesi
Moleküler Biyoloji ve Genetik Bölümü**

ASC Zerrecikleri Nasıl Oluşur



ASC Proteininin NMR Yapısı



PYD

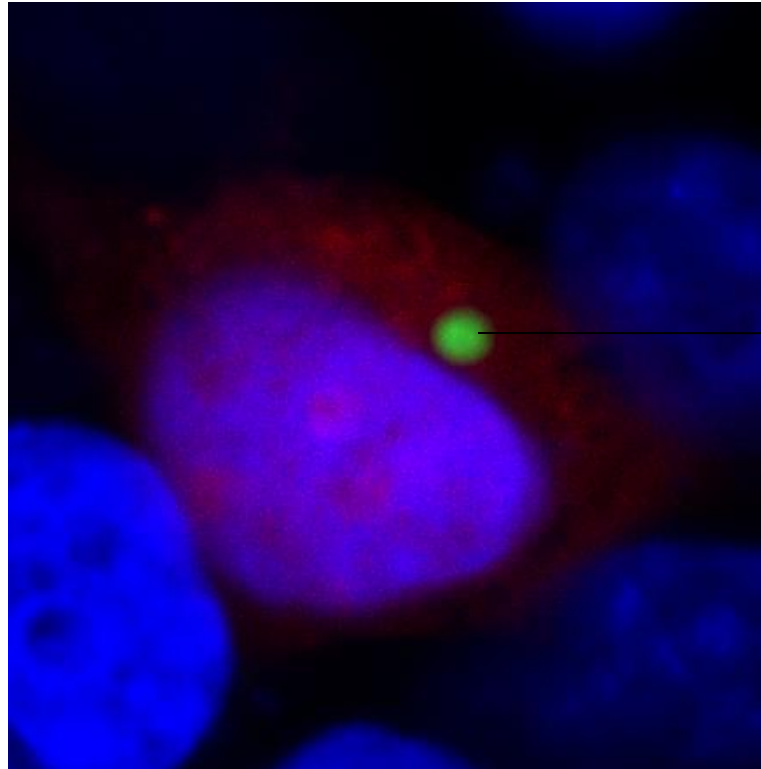
CARD

De Alba ve ark., 2006

ASC Zerreciklerinin Taşıyıcı Olarak Patentlenmesi

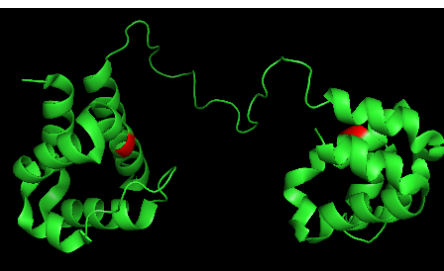
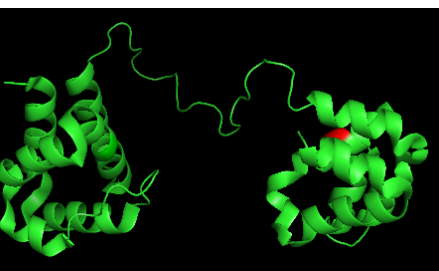
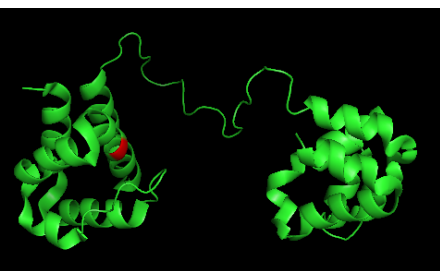
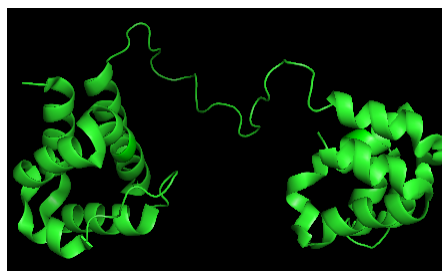
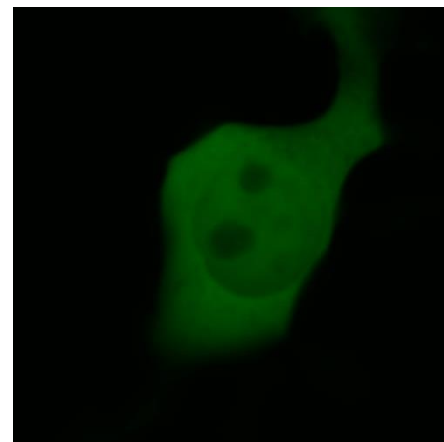
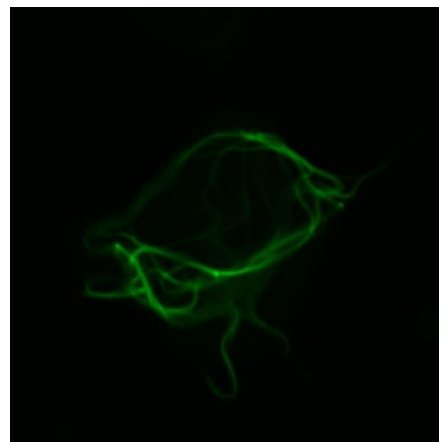
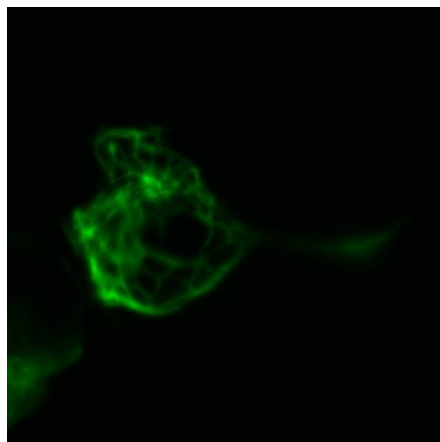
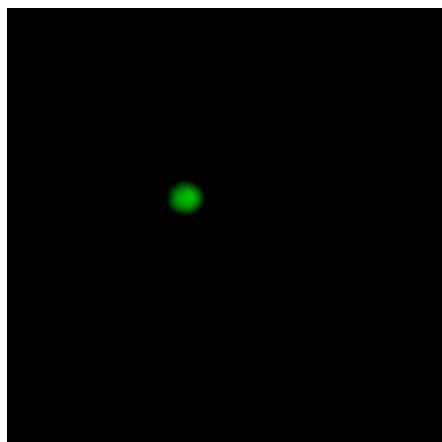
ASC specks are produced in HEK293T cells by transfection of pEGFP-ASC plasmid.

Blue: Nucleus
Red: Cytoplasm



ASC speck





wt

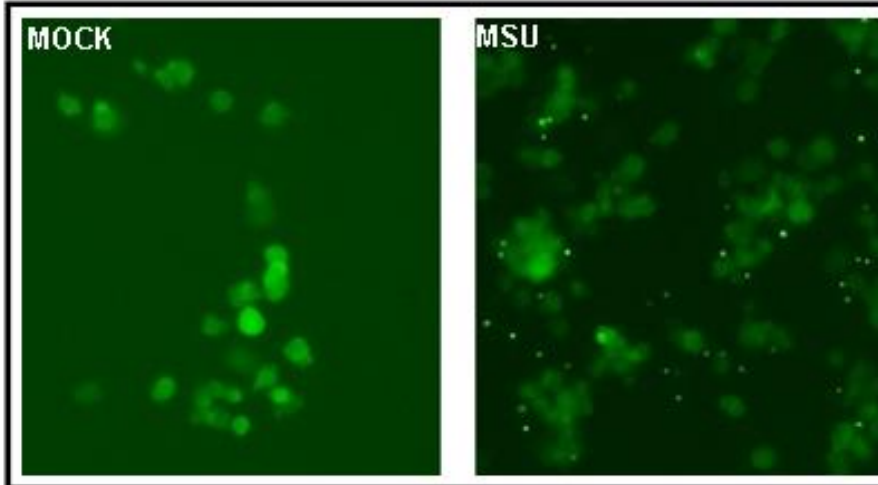
L68A(PYD)

R160A(CARD)

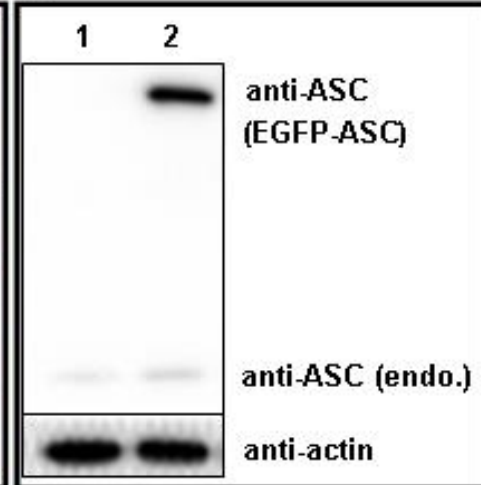
L68A+R160A

ASC Zerreciklerinin Taşıyıcı Olarak Patentlenmesi

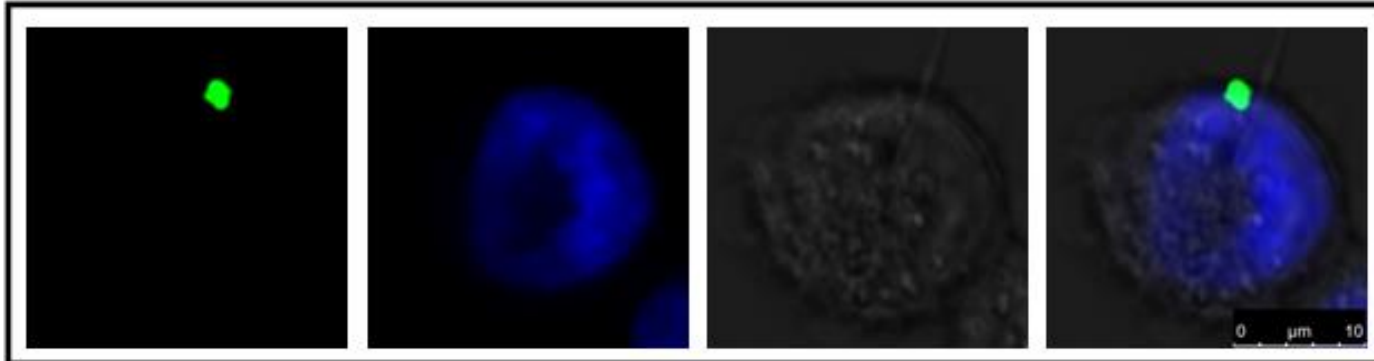
A



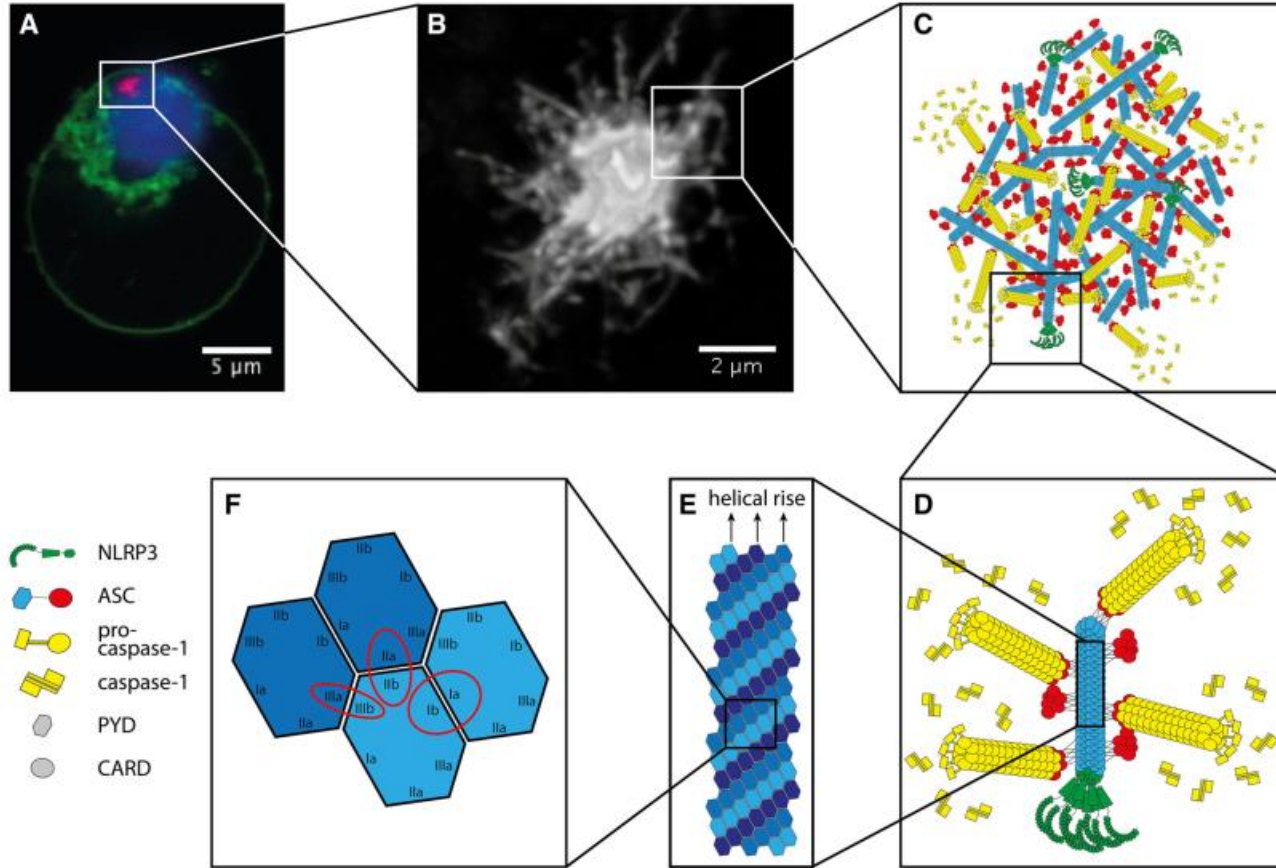
B



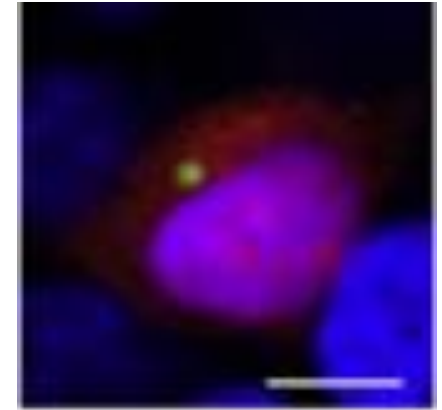
C



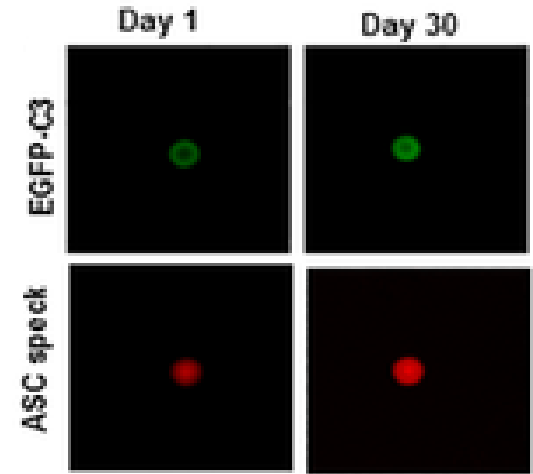
ASC Zerrecik Oluşum Mekanizması



(Hoss et al., 2016)



Sahillioğlu A.C et. al, 2014

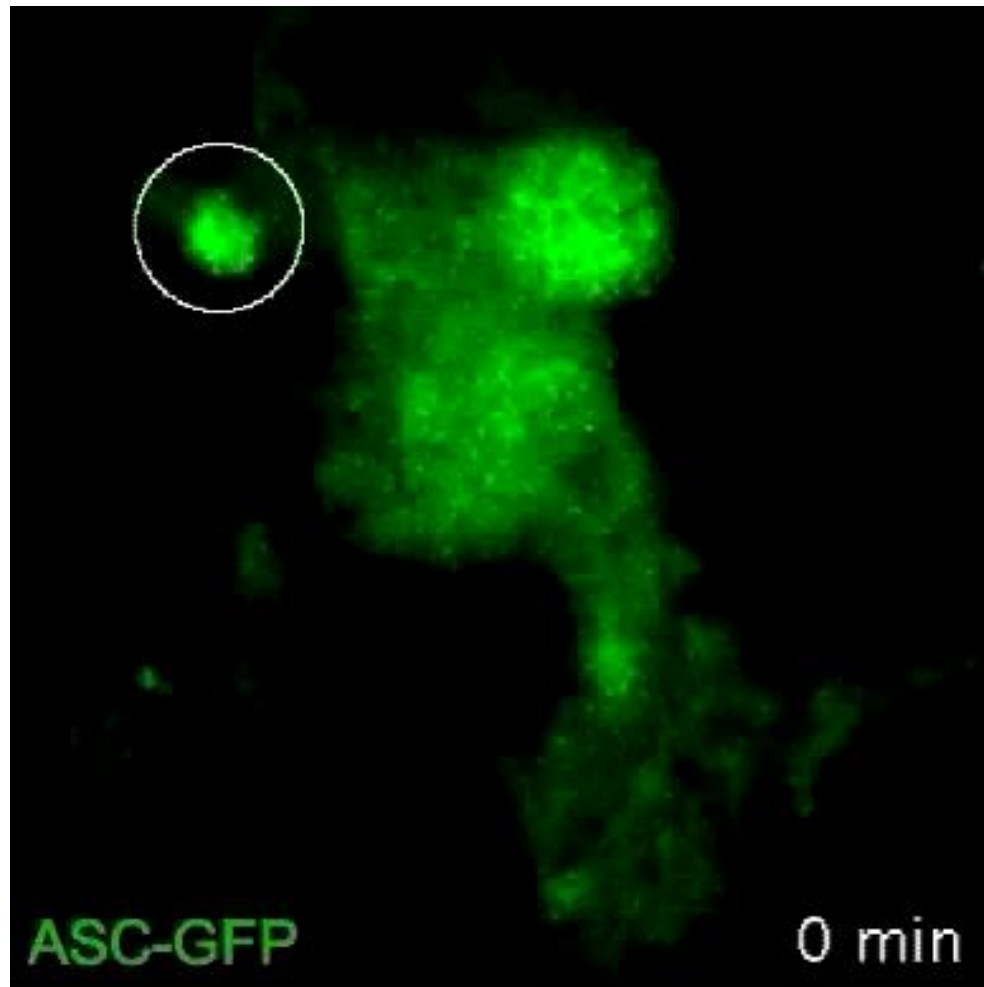


Sahillioğlu A. C. & Ozoren N. 2015

ASC Zerrcikleri Canlıda- *in vivo*

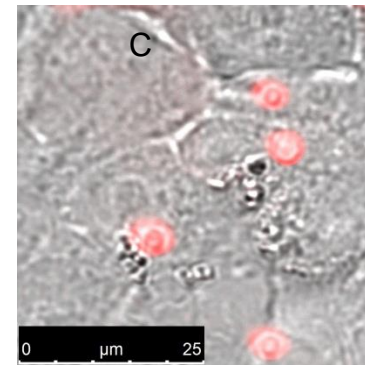
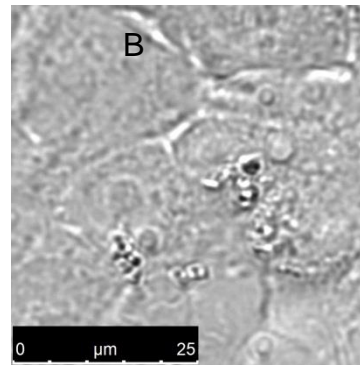
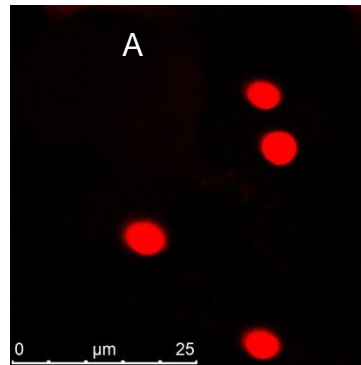
nature
medicine

In vivo imaging of inflammasome activation reveals a subcapsular macrophage burst response that mobilizes innate and adaptive immunity

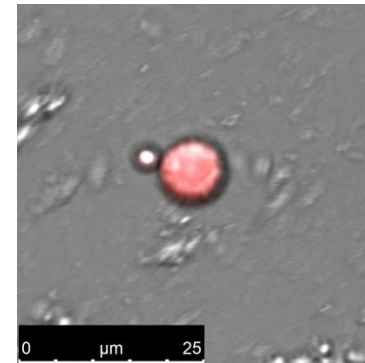
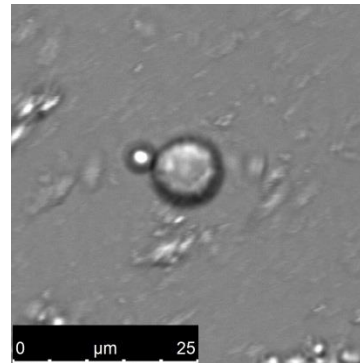
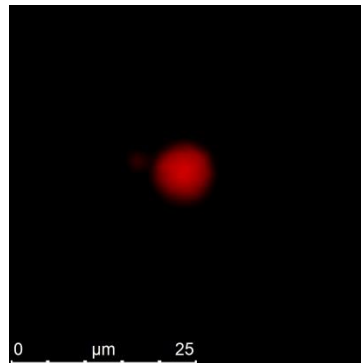


ASC Zerrecikleri Makrofajlar Tarafından Yutuluyor

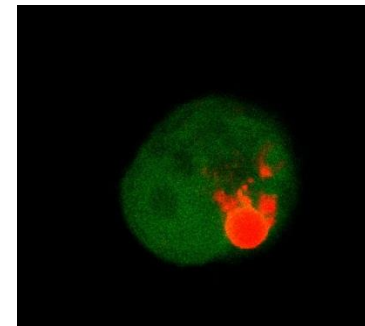
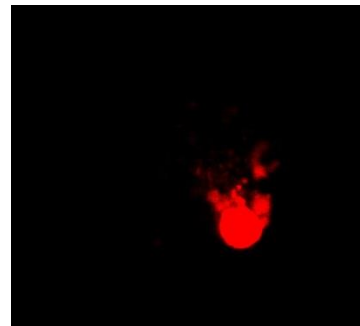
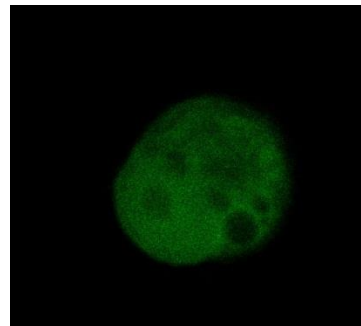
ASC specks
produced in 293T
cells (red)



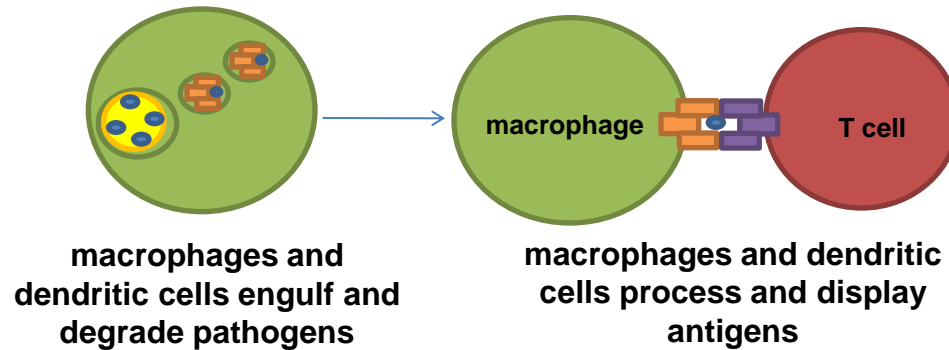
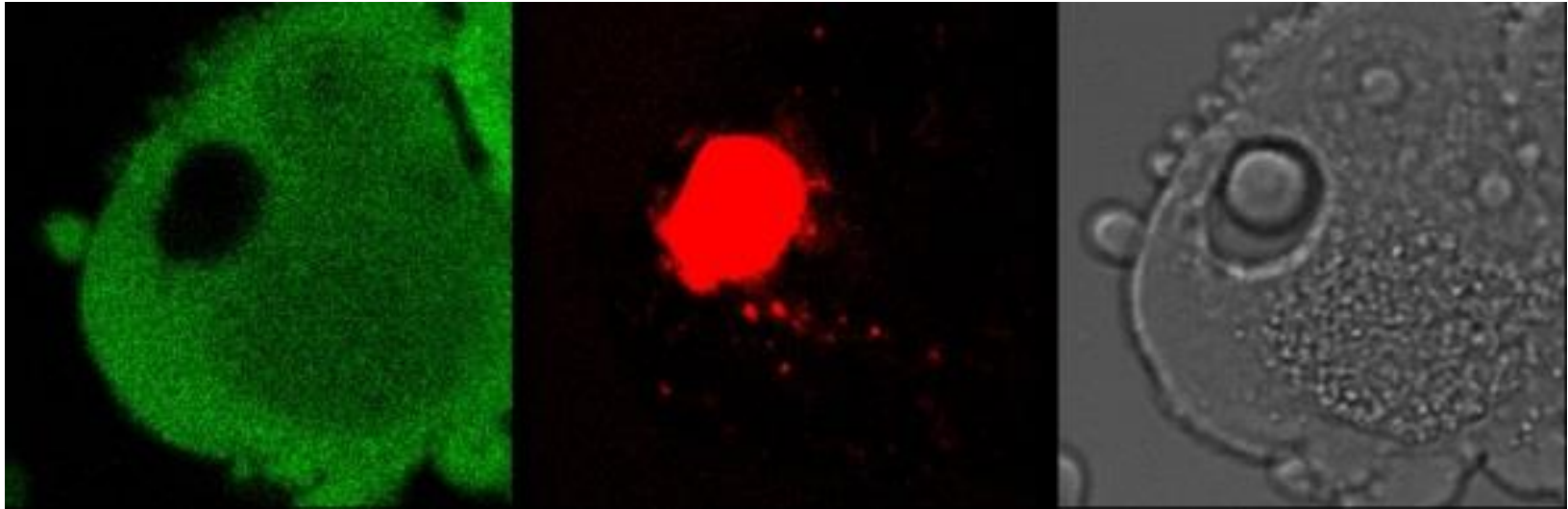
ASC specks
extracted from
293T cells



Macrophages
(green)
after endocytosis
of
ASC specks (red)

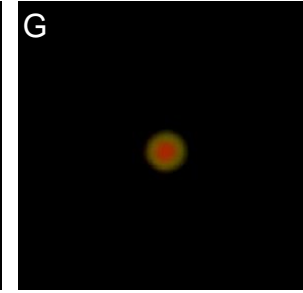
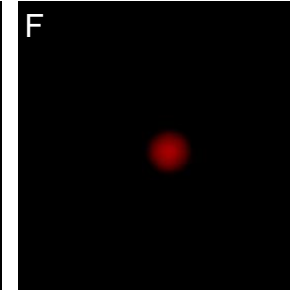
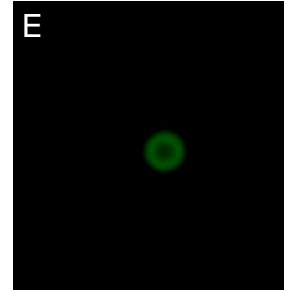
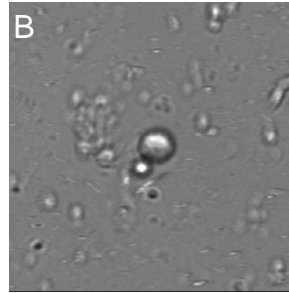
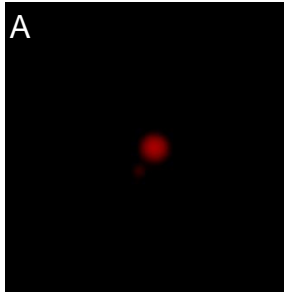


ASC Zerrecikleri Makrofajlar Tarafından Yutuluyor

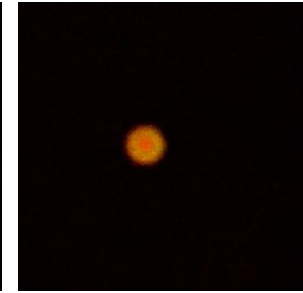
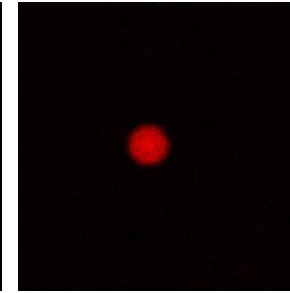
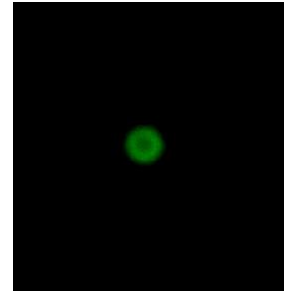
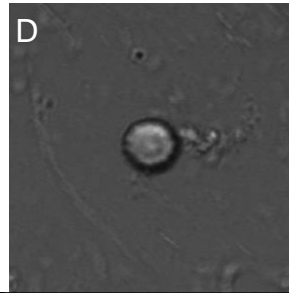
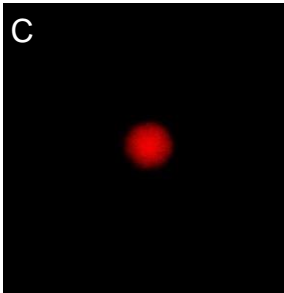


ASC Zerrecikleri Yüksek Isıda Dayanıklı

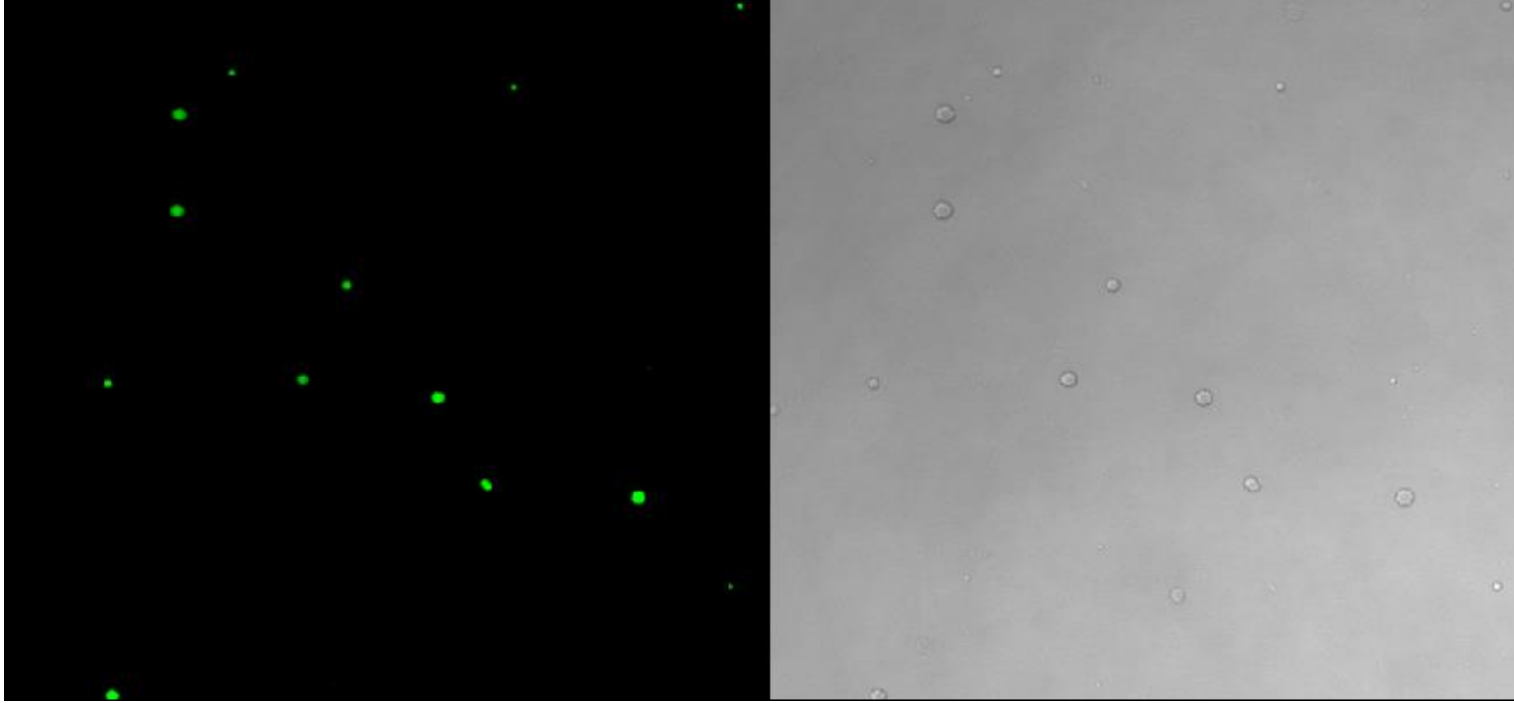
right after
purification



after 30 days
37°C
incubation



Saflařtırılmıř ASC Zerrecikleri

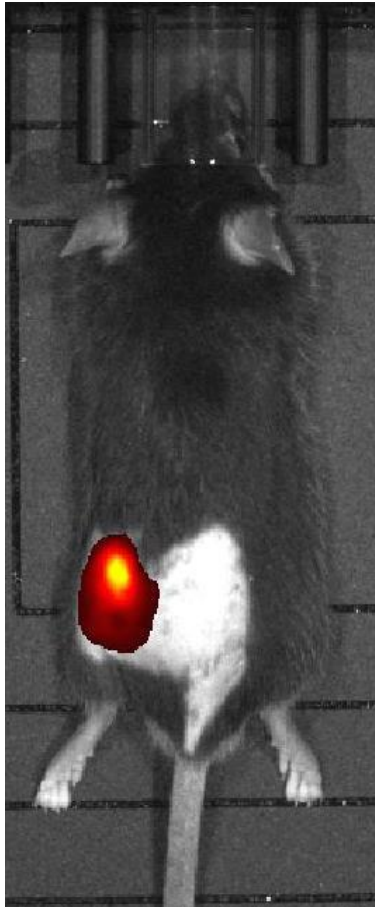


Visualization of ASC specks (mcherry tagged) injected into mice

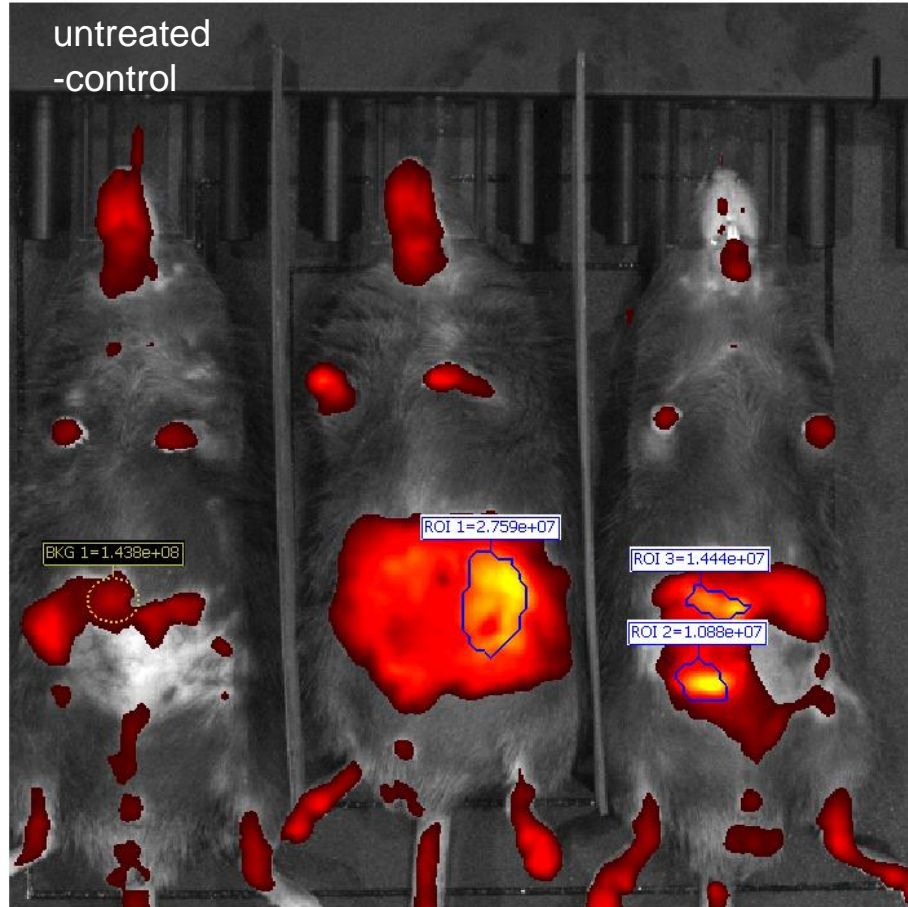
s.c. injected

i.p. injected

i.v. injected



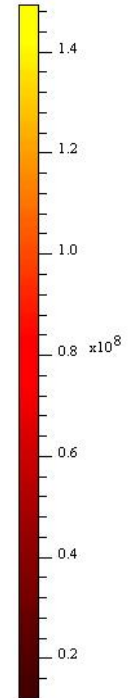
after 4hrs



after 1 day

50ug injection

Epi-fluorescence



Radiant Efficiency
(p/sec/cm²/sr)
 $\mu W/cm^2$

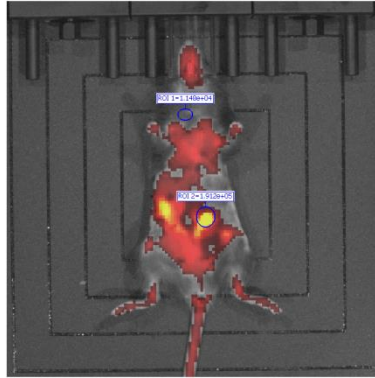
Color Scale
Min = 1.54e7
Max = 3.9e8



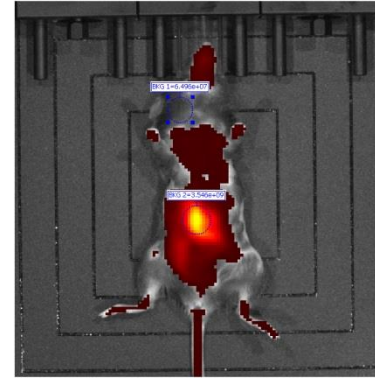
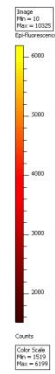
3. Stability of ASC specks inside mice body is identified (Preliminary study)

50ug mcherry-ASC vaccination is done i.v. and i.p.

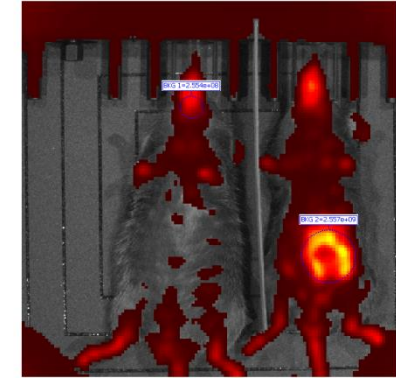
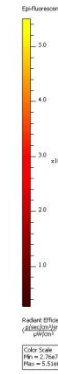
i.v. injections



19.02.15

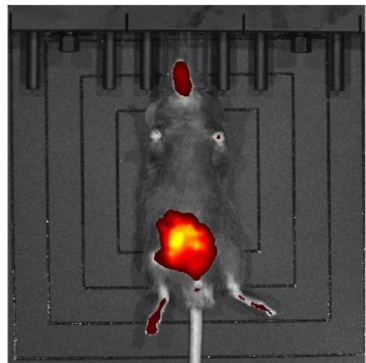


23.02.15

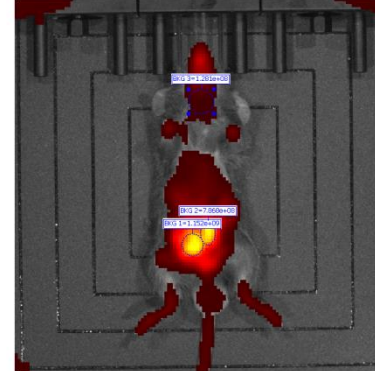
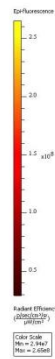


04.03.15

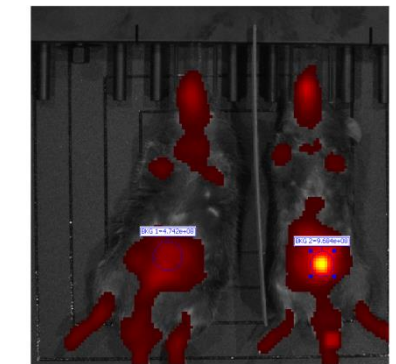
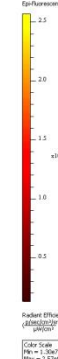
i.p. injections



17.02.15



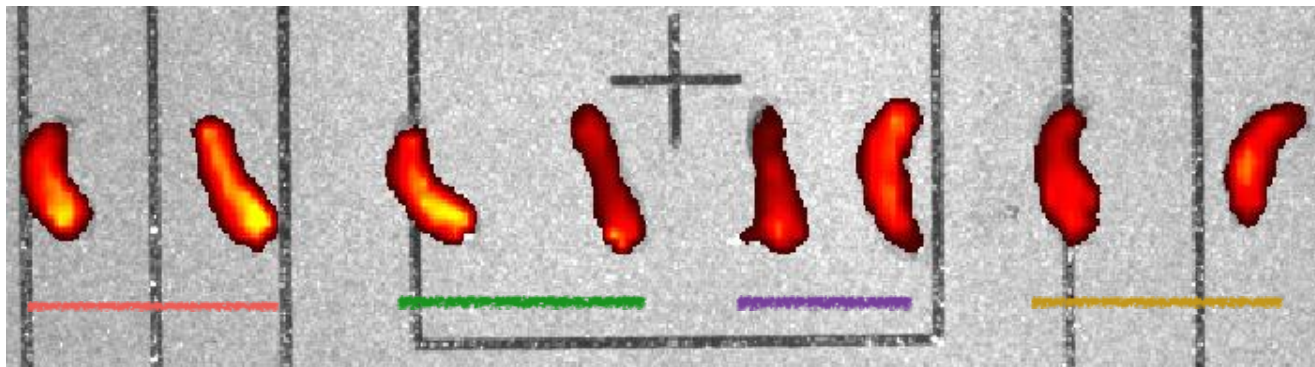
23.02.15



04.03.15

- ◆ At least stayed 2 weeks inside the body!
- ◆ In both i.v. and i.p. ASC specks go through spleen, co-localized all together, passed through lymph nodes in the gut.
- ◆ After 3 weeks ASC specks disappear.

- ✓ Removed spleens are imaged via IVIS tech.



mcherry-ASC
injected mice
spleens

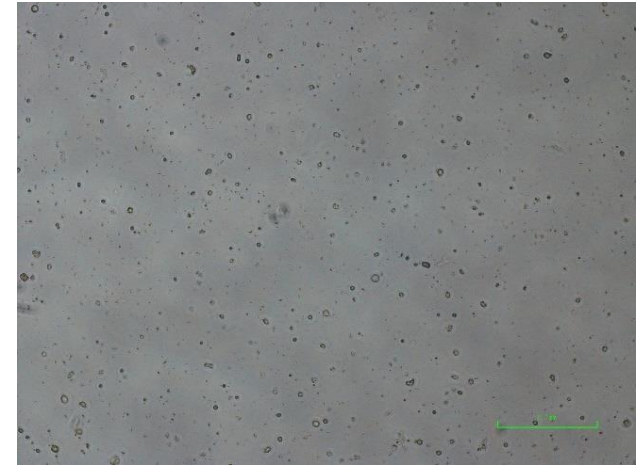
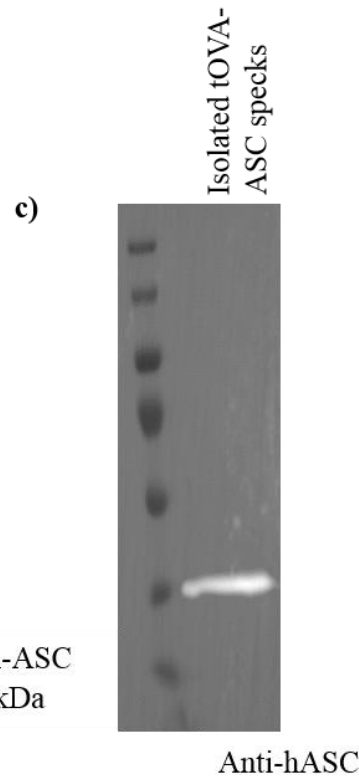
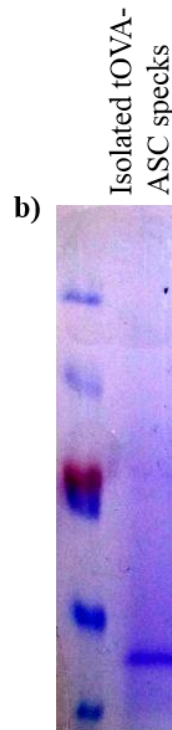
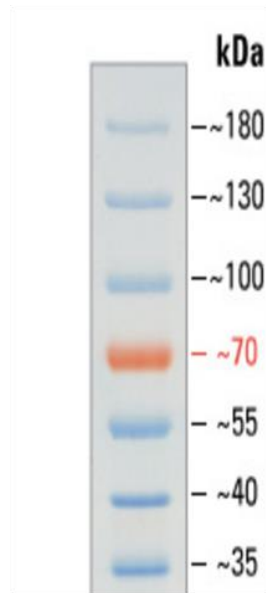
mcherry-
ASC+Freund's
adj. injected
mice spleens

OVA-ASC
injected mice
spleens

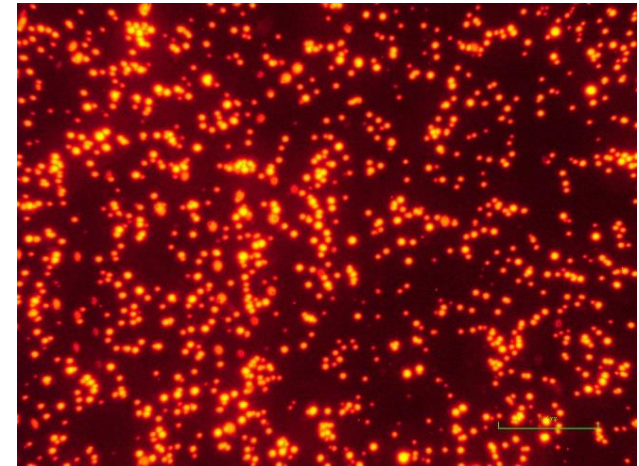
PBS injected
mice spleens

- ◆ After 2 weeks; ASC localize in the spleen!

Saf tOVA-ASC ve mCherry-ASC Zerrecikleri



Purified tOVA-ASC specks



Purified mCherry-ASC specks

Patentlerimiz



URKUNDE

Europäisches Patent

Es wird hiermit bescheinigt, dass für die in der Patentschrift beschriebene Erfindung ein europäisches Patent für die in der Patentschrift bezeichneten Vertragsstaaten erteilt worden ist.

Europäisches Patent No.
European patent No.
Brevet européen n°
Patentinhaber
Proprietor(s) of the patent
Titulaire(s) du brevet

CERTIFICATE

European patent

It is hereby certified that a European patent has been granted in respect of the invention described in the patent specification for the Contracting States designated in the specification.

2841110

Bogazici Üniversitesi
Bebek
34342 İstanbul/TR

CERTIFICAT

Brevet européen

Il est certifié qu'un brevet européen a été délivré pour l'invention décrite dans le fascicule de brevet, pour les États contractants désignés dans le fascicule de brevet.

António Campinos
Präsident des Europäischen Patentamts
President of the European Patent Office
Président de l'Office européen des brevets

证书号第 3243243 号



发明专利证书

发明名称：用于抗原递送的方法

发明人：A. C. 萨希里奥格卢; N. 奥佐伦

专利号：ZL 2013 8 0033558.3

专利申请日：2013 年 04 月 18 日

专利权人：博阿济吉大学

地址：土耳其伊斯坦布尔

授权公告日：2019 年 02 月 05 日

授权公告

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专利证书记载专利权登记时的法律状况。专利权的转移、质押、无效、终止、恢复和专利权人的姓名或名称、国籍、地址变更等事项记载在专利登记簿上。

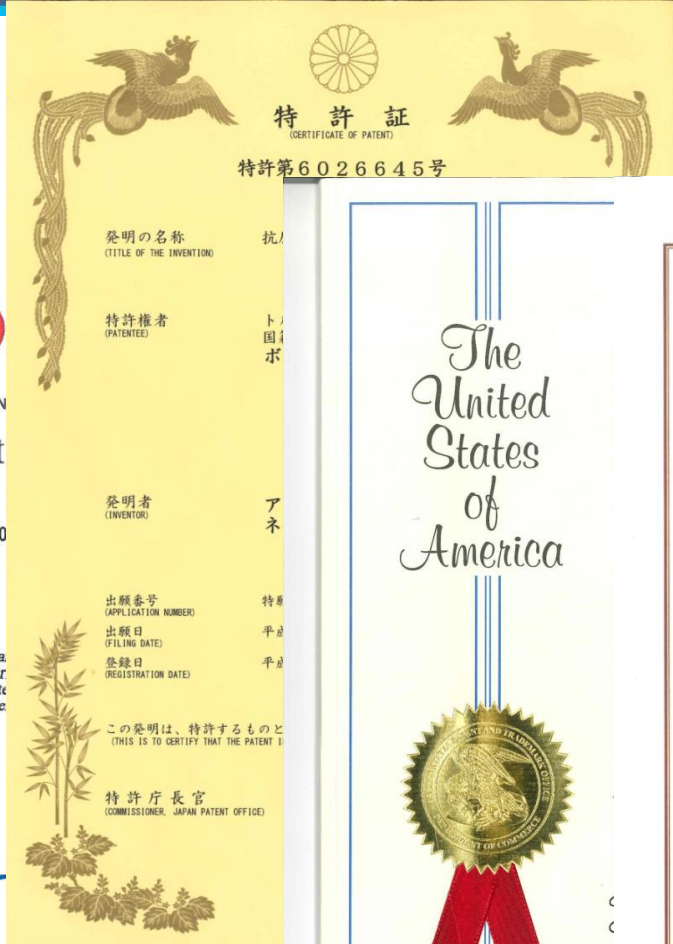
局长
申长雨

申长雨



第 1 页 (共 2 页)

其他事项参见背面



T.C.
TÜRK PATENT EN

İNCELEMELİ

No: TR 2012 0

Bu patent, 551 Sayılı Patent Hakla Kanun Hükmünde Kararname uyarı ile 20 yıl süre ile yenilik ve te aşılması konusunda yapılan incele olarak verilmiştir.

TÜRK PATENT [] ENSTİTÜSÜ

Thank You Ali Can!

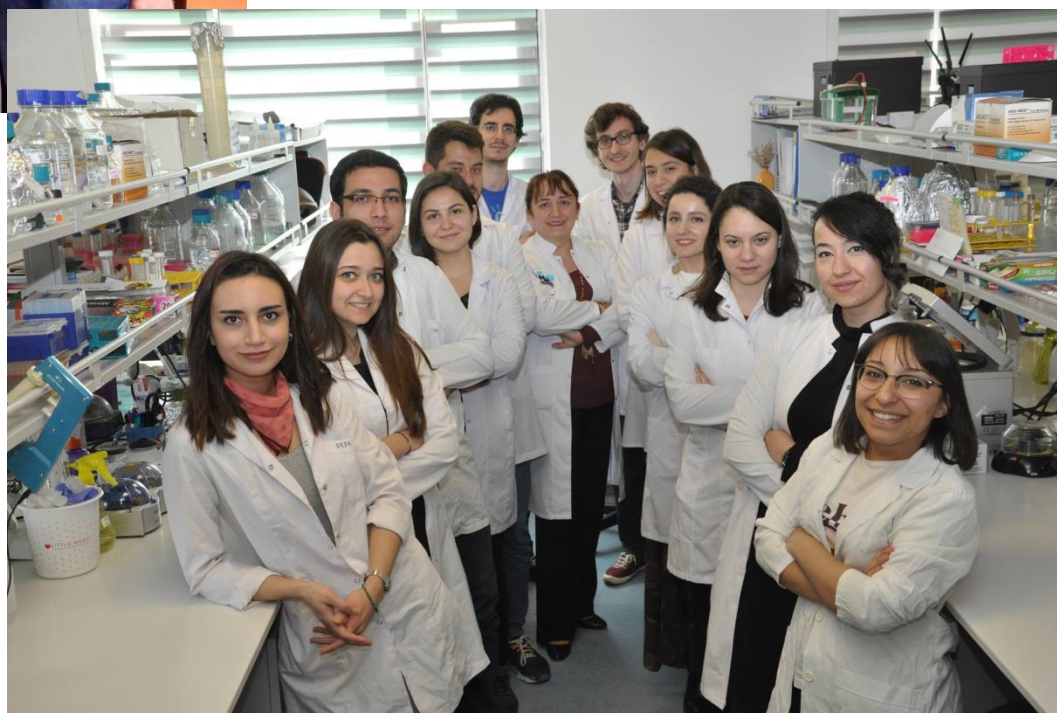


Thank You Seda Yasa!



Apoptosis and Cancer Immunology Laboratory 2007-2017





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Ceren Saygı, M.Sc.

Açelya Yılmaz

Mesut Berber

Aylin Alkan

Ozan Otaş

Olay Gizem Artık

Eski lab üyelerimiz

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Elif Eren, Ph.D.

Ali Can Sahillioğlu, M. Sc.

Seda Yaşa, M. Sc.

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Duygu Demiröz, M. Sc.

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Metehan Çifdalöz, M. Sc.

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Şahru Yüksel, Ph.D.

Teşşekkürler

Ortaklar

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Fidan Sümbül, Ph. D.

Özel Teşekkürler

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Batu Erman, Ph.D.

Amitav Sanyal, Ph.D.

İbrahim Taştekin, M.Sc.

Xalid Bayramlı, Ph.D.

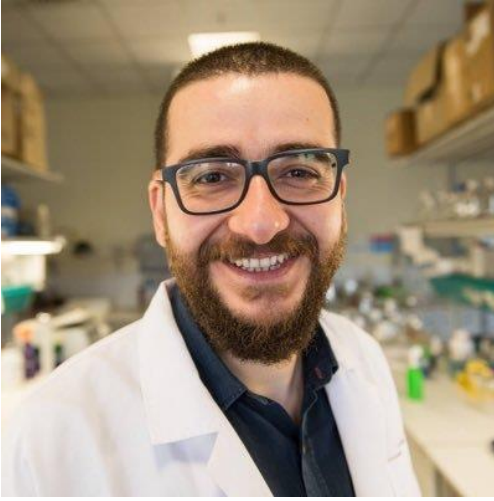
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İhsan Gürsel, Ph. D.

Mayda Gürsel, Ph. D.



COVID-19 Takımı



Nesrin Özören, Ph.D.

e-mail: nesrin.ozoren@boun.edu.tr

