abcam

ab224270

Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free

Recombinant | RabMAb | Advanced Validation | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR6825
Purification technique	Affinity purification Protein A
Concentration	1.017 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	-

Notes	-

Expected

Species	Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ChIP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Rat, Mouse, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information KDM1A

Function

Histone demethylase that can demethylate both 'Lys-4' (H3K4me) and 'Lys-9' (H3K9me) of histone H3, thereby acting as a coactivator or a corepressor, depending on the context (PubMed:15620353, PubMed:15811342, PubMed:16079794, PubMed:16079795, PubMed:16140033, PubMed:16223729, PubMed:27292636). Acts by oxidizing the substrate by FAD to generate the corresponding imine that is subsequently hydrolyzed (PubMed:15620353, PubMed:15811342, PubMed:16079794, PubMed:21300290, PubMed:26214369). Acts as a corepressor by mediating demethylation of H3K4me, a specific tag for epigenetic transcriptional activation. Demethylates both mono- (H3K4me1) and di-methylated (H3K4me2) (PubMed:15620353, PubMed:20389281, PubMed:21300290, PubMed:23721412). May play a role in the repression of neuronal genes. Alone, it is unable to demethylate H3K4me on nucleosomes and requires the presence of RCOR1/CoREST to achieve such activity (PubMed:16079794, PubMed:16140033, PubMed:16885027, PubMed:21300290, PubMed:23721412). Also acts as a coactivator of androgen receptor (AR)-dependent transcription, by being recruited to AR target genes and mediating demethylation of H3K9me, a specific tag for epigenetic transcriptional repression. The presence of PRKCB in AR-containing complexes, which mediates phosphorylation of 'Thr-6' of histone H3 (H3T6ph), a specific tag that prevents demethylation H3K4me, prevents H3K4me demethylase activity of KDM1A (PubMed:16079795). Demethylates di-methylated 'Lys-370' of p53/TP53 which prevents interaction of p53/TP53 with TP53BP1 and represses p53/TP53-mediated transcriptional activation. Demethylates and stabilizes the DNA methylase DNMT1 (PubMed:29691401). Demethylates methylated 'Lys-42' and methylated 'Lys-117' of SOX2 (PubMed:29358331). Required for gastrulation during embryogenesis. Component of a RCOR/GFI/KDM1A/HDAC complex that suppresses, via histone deacetylase (HDAC) recruitment, a number of genes implicated in multilineage blood cell development (PubMed:16079794, PubMed:16140033). Facilitates epithelial-to-mesenchymal transition by acting as an effector of SNAI1-mediated transcription repression of epithelial markers E-cadherin/CDH1, CDN7 and KRT8 (PubMed:20562920, PubMed:27292636). Required for the maintenance of the silenced state of the SNAI1 target genes E-cadherin/CDH1 and CDN7 (PubMed:20389281). Required for the repression of GIPR expression (PubMed:34655521, PubMed:34906447). Isoform 2. Neuron-specific histone demethylase that demethylates mono- and dimethylated 'Lys-20' of histone H4 (H4K20me1 and H4K20me2), a chromatin repressive mark (PubMed:26214369). This demethylation is crucial for the initiation and elongation of neuronal activity-regulated genes, required for spatial learning and memory (By similarity). Mediates H3K9me2 demethylation through cooperation with the supervillin protein (SVIL), and this H3K9 demethylase activity is essential for

regulating gene expression during neuronal differentiation (PubMed:25684206). Isoform 4. Neuron-specific histone demethylase that demethylates mono- and dimethylated 'Lys-20' of histone H4 (H4K20me1 and H4K20me2), a chromatin repressive mark (PubMed:26214369). This demethylation is crucial for the initiation and elongation of neuronal activity-regulated genes, required for spatial learning and memory (By similarity). Mediates H3K9me2 demethylation through cooperation with the supervillin protein (SVIL), and this H3K9 demethylase activity is essential for regulating gene expression during neuronal differentiation (PubMed:25684206).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab224270 is the carrier-free version of ab129195.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody

preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

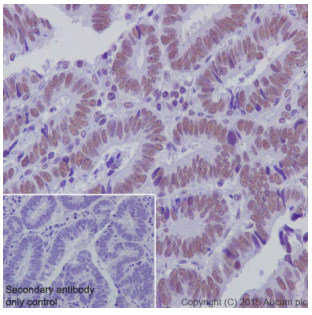
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

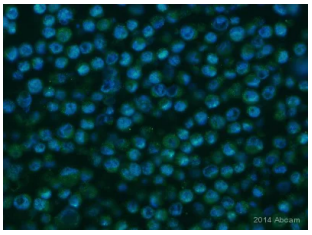
Full details and terms and conditions can be found here:
Terms & Conditions.

13 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

Immunohistochemical staining of paraffin embedded human stomach carcinoma with purified ab129195 at a working dilution of 1/50. The secondary antibody used is ab97051, a goat anti-rabbit IgG (H&L) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).

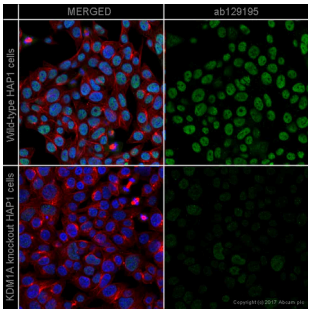


This image is courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

KDM1/LSD1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-KDM1/LSD1 antibody

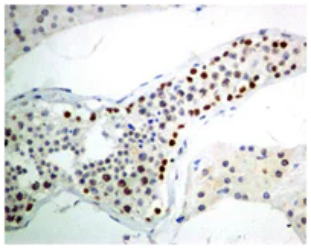
Unpurified ab129195 staining KDM1/LSD1 in human paraffin-embedded A549 lung cancer cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed using the HOPE technique and permeabilized with 0.05% Tween. Samples were incubated with primary antibody (1/100) for 45 minutes at 25°C. An Alexa Fluor®488-conjugated Donkey anti-mouse IgG polyclonal (1/200) was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).



Immunocytochemistry/ Immunofluorescence - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

KDM1/LSD1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-KDM1/LSD1 antibody

This ICC data was generated using the same anti-KDM1/LSD! antibody clone [EPR6825] in a different buffer formulation (cat# ab129195).
ab129195 staining KDM1A/LSD1 in wild-type HAP1 cells (top panel) and KDM1A knockout HAP1 cells (bottom panel). The cells were fixed with 4% formaldehyde (10min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab129195 at 1µg/ml concentration and ab195889 at 1/250 dilution (shown in pseudo colour red) overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) (ab150081) at 2 µg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI.

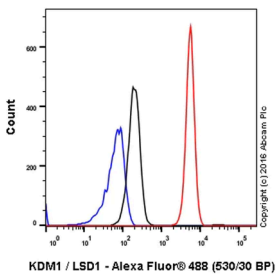


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

KDM1/LSD1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-KDM1/LSD1 antibody

Unpurified ab129195, at 1/100, staining KDM1 / LSD1 in paraffin embedded Human testis tissue by Immunohistochemistry.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).

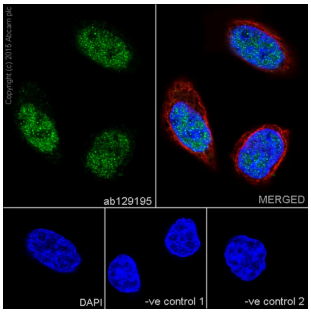
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

KDM1/LSD1 Flow Cytometry (Intracellular) staining using rabbit Anti-KDM1/LSD1 antibody

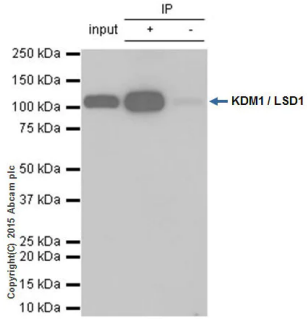
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling KDM1/LSD1 with purified ab129195 at 1/20 dilution (10ug/mL) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).



Immunocytochemistry/ Immunofluorescence - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

KDM1/LSD1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-KDM1/LSD1 antibody

Immunofluorescence staining of HeLa cells with purified ab129195 at a working dilution of 1/100, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (ab150077), used at a dilution of 1/1000. ab7291, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin along with ab150120 (Alexa Fluor® 594 goat anti-mouse, 1/1000), shown in the top right hand panel. The cells were fixed in 4% PFA and permeabilized using 0.1% Triton X 100. The negative controls are shown in bottom middle and right hand panels - for negative control 1, purified ab129195 was used at a dilution of 1/500 followed by an Alexa Fluor® 594 goat anti-mouse antibody (ab150120) at a dilution of 1/500. For negative control 2, ab7291 (mouse anti-tubulin) was used at a dilution of 1/500 followed by an Alexa Fluor® 488 goat anti-rabbit antibody (ab150077) at a dilution of 1/400.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).

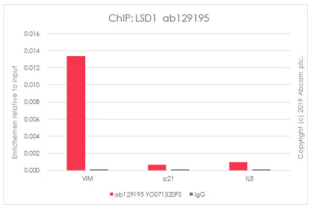


Immunoprecipitation - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

ab129195 (purified) at 1/20 immunoprecipitating KDM1/LSD1 in 10 µg Jurkat cell lysate (Lanes 1 and 2, observed at 110 kDa). Lane 3 - Rabbit monoclonal IgG (ab172730). For western blotting, VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10,000 dilution. Blocking buffer and concentration: 5% NFDM/TBST Dilution buffer and concentration: 5% NFDM/TBST
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).

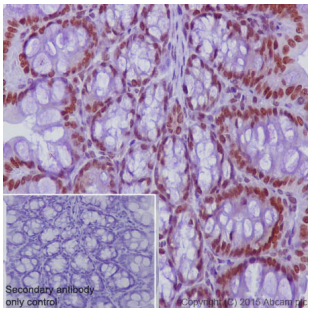
All lanes:
Immunoprecipitation - Anti-KDM1/LSD1 antibody [EPR6825] - Nuclear Marker and ChIP Grade (ab129195)

Predicted band size: 92 kDa



ChIP - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

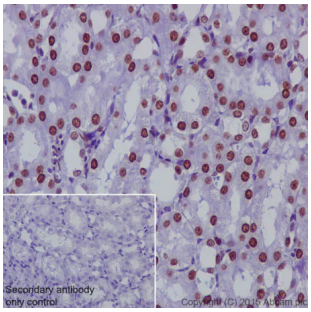
Chromatin was prepared from HCT 116 cells according to the Abcam X-ChIP protocol. Cells were fixed with 1% formaldehyde for 10 minutes. The ChIP was performed with 25µg of chromatin, 5µg of ab129195 (red), and 20µl of protein A/G sepharose beads slurry (10µl of sepharose A beads + 10µl of sepharose G beads). 5µg of rabbit normal IgG was added to the beads control (grey). The immunoprecipitated DNA was quantified by real time PCR (Sybr green approach).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

KDM1/LSD1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-KDM1/LSD1 antibody

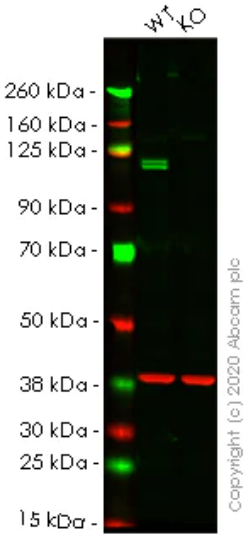
Immunohistochemical staining of paraffin embedded mouse colon with purified ab129195 at a working dilution of 1/50. The secondary antibody used is ab97051, a goat anti-rabbit IgG (H&L) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

KDM1/LSD1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-KDM1/LSD1 antibody

Immunohistochemical staining of paraffin embedded rat kidney with purified ab129195 at a working dilution of 1/50. The secondary antibody used is ab97051, a goat anti-rabbit IgG (H&L) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab129195).



Western blot - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

KDM1/LSD1 Western blot staining using rabbit Anti-KDM1/LSD1 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab129195).
Lanes 1- 2: Merged signal (red and green). Green - ab129195 observed at 110 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.

ab129195 was shown to react with KDM1/LSD1 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab265790 (knockout cell lysate ab256965) was used. Wild-type HeLa and KDM1 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab129195 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-KDM1/LSD1 antibody [EPR6825] - Nuclear Marker and ChIP Grade (ab129195) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

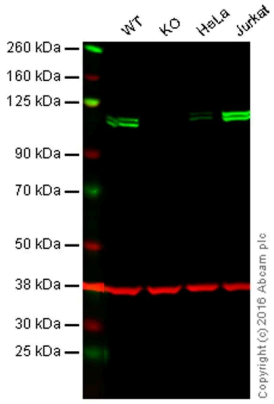
Lane 2:
KDM1A knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human KDM1A (LSD1) knockout HeLa cell line (ab265790)

Performed under reducing conditions.

Predicted band size: 155 kDa, 92 kDa

Observed band size: 110 kDa, 160 kDa



Western blot - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

This data was developed using the same antibody clone in a different buffer formulation (ab129195).
Lanes 1 - 4: Merged signal (red and green). Green - ab129195 observed at 110 kDa. Red - loading control, ab8245, observed at 37 kDa.

ab129195 was shown to specifically react with KMD1 / LSD1 in wild-type HAP1 cells. No band was observed when KMD1 / LSD1 knockout samples were used. Wild-type and KMD1 / LSD1 knockout samples were subjected to SDS-PAGE. ab129195 and ab8245 (loading control to GAPDH) were both diluted 1/10,000 and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10,000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270) at 1/10000 dilution

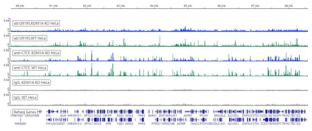
Lane 1:
Wild-type HAP1 cell lysate at 20 µg

Lane 2:
KMD1 / LSD1 knockout HAP1 cell lysate at 20 µg

Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
Jurkat cell lysate at 20 µg

Predicted band size: 92 kDa



ChIC/CUT&RUN sequencing - Anti-KDM1/LSD1 antibody [EPR6825] - BSA and Azide free (ab224270)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL. 2.5X10^5 of Human wild-type HeLa cell line (ab255928) or KDM1A (LSD1) knockout HeLa cell line (ab265790) were used along with 5µg of ab129195 [EPR6825]. Assay Quality Control was conducted using 5µg Anti-CTCF(ab188408) on the same cell lines. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown. Additional screenshots of mapped reads can be found in the Protocol booklet in the Product Protocol section. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods. This data was developed using the same antibody clone in a different buffer formulation (ab129195).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.